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[For the American Bee Journal.]

## Unedited Letters of Huber.

JANUARY 20, 1801.

SIR:—I have this moment received your letter of the 10th. I will not reply to it now, but wait until after I have received your promised letter. I admire your skill in manipulations, and your sagacity; which gives me hope that the history of the bee may be pursued further. Study constantly the book of nature, it will teach you more than all the romances that have been written on the bee. You understand, Sir, that this little memoir is only for your eye.\* I have counted upon your indulgence in writing it, and do not wish it to go out of your hands, as I hope some day to publish these observations. I have the honor to be yours very devotedly—

F. HUBER.

P. S.—I see by your letter that you have anticipated the doing away with the bottom piece of the frames of the leaf hive. It was only after long experience that I felt the inconvenience of full frames. The cross piece that I put in the middle of the frames should be narrower than the upright pieces. It may be an inch in breadth and a quarter of an inch in thickness.

To compel the bees to build their combs parallel to the small side of the hive, it is not sufficient to put a piece of comb in one of the frames; success is more surely attained by cutting a clean old comb in pieces, six inches long by one or two broad. Fasten the first piece firmly in the top of the third frame; the second in the sixth; the third in the ninth frame, &c.; continue in this order if the hive have more than ten frames. You must also put several pieces of comb in the hives such I sent you a model of. (Translated by Dr. Ehrick Parmley.)

The first edition of Huber's work on bees (*Nouvelles observations sur les abeilles*) was published in 1792. It has plates which show very clearly the construction of his hive. The tops and bottoms of his frames (called by him *leaves*) were about an inch and a quarter wide, and were dovetailed to uprights of the same width, thus making them close fitting, so that when put to-

gether they formed the hive, the ends being closed with glass darkened by shutters.

The second edition, edited by his son, was published in 1820, and although it contains much new matter, especially on the architecture of bees, it uses the same cuts of the hive with the first edition. But for these letters which have so unexpectedly come to the knowledge of the bee-world, we should never have known that Huber made or even contemplated any changes in the construction of his hives. In the June No. of the Journal, his reasons for dispensing with the hinging of his frames were given, and now we find him discarding the bottom pieces of his frames. To those who have no experience of the slow advances usually made in inventions, it may appear almost unaccountable that Huber did not, from the very start, see how greatly the close fitting bottom strips impeded the manipulation of his frames. As no smoke was used in pacifying the bees, nothing but the indomitable courage and patience of a Burnens was equal to the task of managing such a hive.\*

The method employed by Huber of fastening his guide combs by small pegs, was far inferior to the subsequent device of securing them by melted wax, or a composition of melted rosin and bees-wax.

The Abbe Della Rocco, whose work on bees in three volumes (*Traité complet sur les abeilles*) was published in 1790, used at first methods still ruder than those of Huber. His recommending the placing of a sharp angled edge on the under side of his bars would seem to be an anticipation, in the date of publishment at least, of the device of the celebrated English surgeon, John Hunters, who in a memoir read in 1792 before the London Royal Philosophical Society, advised the use of a salient angle or bevelled edge, to induce bees to build their combs in any desired direction.

L. L. LANGSTROTH.

\* In his preface, Huber thus speaks of his assistant: "It is impossible to form a just idea of the patience and skill with which Burnens has carried out the experiments, which I am about to describe. He has often watched some of the working bees of our hives, which we had reason to think fertile, for the space of twenty-four hours, without distraction, and, without taking rest or food, in order to surprise them at the moment when they laid their eggs."

\* This letter was at the close of the memoir we are about to present. Hamet.

### Profuse Blossoming of the Locusts.

On the last day of April, 1871, a very severe frost so injured the common locust (*Robinia Pseudacacia*), that it blossomed very sparsely in southern Ohio. This year it has blossomed very profusely, and with suitable weather would have afforded a large yield of honey. Cool, wet and windy weather has, however, made it of very small service to the bees. In 1861 some of my strongest stocks gathered 50 pounds from this source.

L. L. L.

### Color of Italian Queens.

As few of our readers have access to our article on this subject, published originally in the *Rural New-Yorker*, we reprint it with some additional remarks.

#### THE BEEKEEPER.

##### *On the Color of Italian Queen Bees.*

EDS. RURAL NEW-YORKER:—It is a fact well known to breeders of Italian bees, that the color of the queens raised from a pure mother is far more variable than that of the workers. Some of the queen progeny of females brought from the districts in Italy where none but the pure race are found, have abdomens of a brilliant yellow, the tip alone being of a black or brownish color; others have only one or two yellow rings, while others again are even darker than common queens.

Various theories have been advanced to account for these facts. Dzierzon and other Germans are of the opinion that none of the Italian bees are absolutely pure, but that all have a *taint* or *dash* of black blood, which can only be got rid of by a long course of careful breeding. After ten years of assiduous labor, he does not claim to have entirely overcome this taint, but thinks he has purer bees than can be found in Italy, and that in ten years more he will be able to breed out all traces of the black blood.

Some attribute the tendency to sport in color to a *mysterious* influence exerted upon the queen larvæ by the hybrid or black nurses by which they are often reared. Mr. Kirby believes that their larvæ are *fed* with the *semen* of black or hybrid drones, and in this way obtain a taint of the black blood!—a theory which must be rejected, not merely because it appears contrary to all analogy, but because it is directly contrary to facts. The same tendency to sport has been noticed in districts where no common bees are found; and the queen larvæ of black bees, when entrusted to Italian workers, are not found to have any traces of the Italian blood. Moreover, those breeders who persist in rearing their queens in colonies of black or hybrid bees, are now, after an experience of four seasons, able to secure as large a proportion of beautiful queens, as when they first began to practice—a result which could not be obtained, if, according to Mr. Kirby's theory, they had been getting further and further from the pure blood.

I shall communicate to your readers some facts which seem to me to throw considerable light upon this perplexing subject, if they do not fully account for all its difficulties.

In May, 1862, I reared a number of very beautiful queens from a brilliantly colored Italian mother, and for some time all her progeny were of this type. After a while some of her queens were small and poorly colored. I now began to suspect that the *condition of the colonies in which the queens are reared might have a decided effect upon their color, as well as their size*, and was the more confirmed in this view when I subsequently obtained from the larvæ of the same mother, reared in the same colonies, few but handsome queens. The first lot were raised when the nuclei, or small colonies to which the Italian brood was given, *were vigorously getting both honey and pollen*; the inferior ones were reared when forage was so scarce that the nuclei had to be fed. Later in the season when forage was abundant, the young queens were nearly all of the beautiful type; while later still, when the colonies had to be fed again, the color and often the size of the queens again became indifferent.

A year ago, last spring, I suggested to Prof. J. P. Kirtland, of Cleveland, that I believed the color of the Italian queens depended very much on the condition of the colonies in which they were reared; and that small and discouraged nuclei, *out of heart*, produced a largely disproportionate number of poor queens. The year before he bred his queens in very small nuclei, and was perplexed to find so many of them of an inferior quality. Using, by my advice, a box holding nearly three times as many combs and bees as the one he had been using previously, and breeding his queens when forage was abundant, he obtained last summer the most gratifying results. In a letter addressed to me, he says that nearly all the queens he raised were of a good color, while two other persons, who reared queens in small nuclei, from the same mother, had many poorly colored queens.

My experience this season, is thus far the same with that of last year—leading me to believe that I have discovered an important law upon this subject, and that queens require, for their perfect development in size and color, to be fed with all the royal jelly they can possibly consume. In queen cells, reared in large colonies during the swarming season, a large accumulation of the jelly is often found after the queen is hatched; while in those reared in small or discouraged colonies, there is seldom found any excess of it. This season I have examined, in swarming colonies, a number of uncommonly large queen cells, and in some of them have found nearly half an inch of jelly at the base of the cell. Soon after the queens creep out from such cells, this jelly may often be found of the color and consistence of a rich quince jelly. It is very seldom that any jelly is found in the cells of queens reared in small colonies, after these queens have emerged.

As small colonies frequently attempt to rear a number of queens entirely disproportional to the number reared in large colonies, it must often happen that some of those queens are

scantly fed, and therefore imperfectly developed. I have not, however, been able to discover that queens of extra size and beauty are more prolific, or that they produce a handsomer progeny, than smaller and darker ones bred from the same mother.

L. L. LANGSTROTH.

Oxford, Butler Co., Ohio, July 4, 1863.

A few years after writing the above article, we made the experiments referred to in the May No., page 263, showing how the color of the brightest young queens can be changed by withdrawing them from the care of the bees. About the same time we had, in the month of August, a large number of queens hatch, for which we had no immediate use, and it occurred to us that we might preserve them for future use by putting them with a few bees into the small boxes used for sending off queens. The boxes were set in a cool place, each one labelled with the character of its queen for color. When we examined them, after about ten days' confinement, we were surprised to find that their beauty had sadly degenerated. From these and other facts, we learned that to be certain of retaining the color of queens after they hatch, they ought, unless in the hottest weather, to be kept in colonies large enough to secure good animal heat.

It may seem unaccountable that while the color of the young workers remain the same, that of queens should be so easily changed, but such are the facts. The deterioration in color from unfavorable conditions must not be confounded with that which often occurs in queens supposed by the inexperienced when first hatched, to be very beautiful, but which become darker under any circumstances. The expert breeder seldom fails, on seeing a just hatched queen, to decide what her type of color will be if she is left in charge of a good colony, and to make the proper allowance for the seeming deterioration which almost invariably precedes her fertilization. After they begin to lay, the color of Italian queens is no more subject to change than that of the workers, showing only the ordinary effects of age. The color of the most brilliant queens seeming gradually to become duller as they grow older.

L. L. L.

[For the American Bee Journal.]

#### Extraordinary instance of Sagacity in Bees.

The facts which we are about to relate, are the most interesting of all the special bee wonders which have come under our own observation. We should hardly venture to give them to the readers of the Journal, if we did not feel it to be a sacred duty for every observer to give to the world any such facts, however seemingly incredible, confident that a fact ("factum") in nature is a thing done by the All-Wise Creator, and that in due time its verity will be made apparent to all.

In the year 1864, we conceived the idea that a very strong colony, queenless and without brood from which to supply their loss, might perhaps by having only a few worker eggs or larvae given to them, be induced to rear queens of extra size

and beauty. To such a stock, we gave a piece of comb, with suitable brood; about half an inch wide and three inches long. Examining it a few days after, we found a dozen or more queen cells begun, and with the head of a pin, removed the queen larvae from all of them but four, and left none in any of the other cells. When those cells were all capped, we thought it would be economy to set the strong stock to work upon a second lot. As we had put the first piece of comb into a place cut out for it between one of the uprights of the frame and the comb, we put the second into a similar place on the other side of the same comb. Lifting out the combs a few days after to note progress, we were surprised to find not a single royal cell begun on this last inserted piece, and not a single larva in any of its cells. Looking at the piece first put in, to our amazement we found all the royal cells from which the tenants had been extracted, occupied afresh! and the cells much more advanced than at the time we destroyed their first occupants. These bees were evidently determined not to lose the labor they had bestowed on the first set of cells, and had removed to them the larvae from the worker cells on the opposite side! The queen, by a law of her nature depositing her eggs in the proper cells, the bees have no necessity or inclination ordinarily to disturb them; and it is an exceptional occurrence for them ever to do it.

Let those who can find in all the operations of this wonderful insect in which Aristotle could see "something divine," nothing but what they call a blind unreasoning instinct, account if they can, for this unusual but wise adaptation of special means to ends which it was impossible for them to foresee.

L. L. LANGSTROTH.

[For the American Bee Journal.]

#### Dronings, No. 2.

1. A careful study of Mr. Grimms' article in January number, on "Rearing artificial queens, and their value," leads me to ask: Have we sufficiently reflected on the importance of having a number of pure *drone laying* Italian queens in our apiaries? Would not our main object be more speedily attained in this way than by restricting ourselves to fertile queens? Fill the air as he did in April with thousands of pure Italian drones, and if we have any pure queens in the apiary we almost ensure the preservation of purity, but on the other hand if we leave this matter to chance we need not expect anything but hybrids. I do not forget the Dzierzon theory, and therefore do not hold out the hope that an apiary can be Italianized in one season; but I am sure that the object will be sooner reached if one works with both hands as it were.

2. Mr. W. J. Davis does good service in counselling a more careful and systematic culling of our hives. We are too greedy as a general thing—too anxious to multiply stocks—to save suspicious hives. Now, in my humble judgment, it is worse than lost time to be feeding weak stocks. Double them, triple them, and then feed, if you



please, for you will have some chance of compensation for your time and trouble. And then about foul-brood, don't waste your time smoking it with sulphur, or weary yourself in vain by walking over to the "thread-factory" to dip the frames in hyposulphates and chlorides, and then indulge the false, perhaps fatal hope that the foul thing is done for, but treat them as every wise farmer treats a sheep-killing dog, or a glandered horse,—crush, burn—*utterly destroy*—and then you may have some hope that you may have exorcised the fell spirit; but tamper or temporize with it, and the chances are as 100 to 1 that the whole body *apistic* will soon be hopelessly and ineradicably tainted. *Apropos*: May not those addled eggs (of which Leuckart writes so observantly) furnish in their putrid embryos, the seeds of death instead of the germ of life? May not this be, after all, the fountain of foul-brood?

3. I wish I could feel the flush of the prophetic enthusiasm which already hears the hum of the "coming bee;" but I fear we have to pass through "many varieties of untried beeing" before that avator arrives. Nature is too jealous of her glorious handy-work to yield at once to "idle dreams" and empirical exchanges. As Tennyson sings,

"So careful of the type she seems,  
So careless of the single life,"

that many long years of systematic and scientific efforts must be made with an energy and perseverance that countless failures cannot daunt before we can even hope for that "fixity" which shall assure us (as orator Phillips might say, if he were of our craft) that we have at last obtained the full and perfect bee which shall exhibit in one glow of *banded* beauty the loveliness of Italy and the fecundity of America! (Very fine, isn't it?)

4. Coming down to practical matters, I wish to say a few more words about the best form of receptacles for surplus honey. I have already spoken of the English glasses. As these may be rejected on account of cost, let me call attention to the principle of Mr. Colvin's honey chambers. These chambers are (as some of the readers of the Journal doubtless know) nothing but boxes of the same size as the hive below, with seven frames somewhat wider, and each frame containing two movable sections. When these are filled with honey they can be easily removed, the wooden frame protects the honey (about two pounds in each section), and by judicious packing in boxes made specially they can be transported unharmed for any distance. These sections can be made of any size and placed in the lower as well as in the upper hive, vertically, I should advise, so as to avoid too many beginnings of combs. The reduced size, say seven by eight, of the combs would make them more salable, whilst the cost of renewal would be slight.

5. Are we going to "give it up so" about that substantial testimonial to our real king-bee (not H. A.), the venerable and well deserving Langstroth? Are we so ungrateful that we can forget the inestimable service he has done to our cause? can we forget that out of a mere pas-

time he has made a science? That by his skill and observation he has given a profession, and brought profit to thousands? Shall we, above all, by our lukewarmness strengthen the hands of his enemies who are seeking to embitter the short remnant of his days, and would, if they could, hound him to his grave. Don't tell me that he got up in open convention and begged that nothing more might be done. Of course he did! and anybody with a tithe of his modesty would have done the same thing. And even if it were right to stop them, it seems eminently right to begin again now—his veracity, his honor, his fair name which he values above all things else, are assailed by the foul-brood of our community, and we owe it to ourselves not less than to him, that we should show the world we love and honor him, and how we despise and scorn his traducers. Come, my brethren, let us warm up our hearts to a movable frame, and prepare a solid, substantial testimonial for Mr. Langstroth, that shall in some measure compensate him. Come!

[For the American Bee Journal.]

Basswood.

MR. EDITOR. Thinking that a report of our proceedings for the past season of 1871 may be of interest to your readers, we herewith send it. We started in spring with 28 swarms of Italian bees, part of them hybrid. We have increased them to 76, chiefly by artificial swarming, with from 25 to 35 pounds of honey in each hive to winter in.

Our honey product stands as follows:

White clover,	extracted	350 lbs.
Basswood,	"	1650 "
Mixed and buckwheat,	"	656 "
Box honey,		800 "

The extracted honey we sent to Philadelphia. Our bees did not do much on white clover, but when basswood came in bloom (July 15th), the bees kept us busy emptying out honey. We were fairly swimming in honey for about two weeks. We never saw bees gather honey faster than they did from basswood blossoms. Good swarms would fill their hives in two days when they had empty comb.

Now we see the necessity of urging the beekeepers to cultivate the basswood. There is a great quantity of small basswood trees in the woods in this section which we can get to transplant. Had it not been for basswood, we would not have got any profit from our bees.

We have built us a bee house, 12 by 16 feet, with walls of saw dust, 11 inches thick on the four sides, and 8 inches thick on the floor and overhead, with two ventilators through the floor, 5 inches square, and one in the ceiling, 6 inches in diameter.

We have 84 swarms in the house now, and there are hardly any dead bees under the hive, compared to those out of doors. We bought some bees last fall, and are wintering some out of doors, and some in the bee-house, so that we can see which way of wintering is the best.



When the thermometer was 10° below zero out doors, in the bee-house it was not below freezing, and when it was 50° out of doors, the thermometer in the bee-house rose to 37°. It ranges from 32° to 37° with the ventilators open, giving an even temperature all the time.

It seems that the rapid strides that the beekeepers of this country are making with our improved bees (Italians) and improved system of management, and the use of the honey extractor, would not give old-foggy beekeepers half a chance with their old whims and prejudices about bees.

This section of the country is a good section for bees, and we mean to improve it. We have our willow, and elm, and soft maple in the spring, which keep the bees busy. Next comes dandelion, apple blossoms, white clover, and best of all is basswood, and our fall crop is buckwheat. The bees usually gather enough to winter on, so that we have all our basswood and clover honey pure again.

West Groton, N. Y.

COGGSWELL BROS.

[For the American Bee Journal.]

### The Improved Hive.

As Mr. Nesbit has made public, in the February number of the Bee Journal, what he considers as objections to my style of bee hive, I desire to reply to his article, so far as to state that every one of the features he regards as objectionable, were thought of and duly considered by me before the hive was made; and also to show *why* they are not objectionable. Having used the Langstroth and other patent hives many years, and made other styles of my own, I do not set forth the claims of my present hive without any show of reason.

Mr. Nesbit agrees with me as to the capacity needed for breeding and storing winter supplies, and then asks:

"Why does he want to go so far astray from the most successful apiarians, making his cheap hive almost double the proper capacity?"

Answer: *Of course* the extra capacity is for storing surplus honey, either to be taken out by the extractor, or in the comb. If desired in the comb, it can be obtained much faster in the main hive than in boxes or top frames.

His next objection is, difficulty in lifting out the frames.

Reply: The difficulty is purely imaginary. By removing the division board, any frame can easily be lifted; and if the hive is full of combs and bees, the division board is not needed, but its space at the top filled up with strips of wood. He represents my frame as 15½ by 19¼ inches. This is a mistake, probably an oversight, caused by haste. The frames, inside measure, are 15 by 11; and I find that in lifting and turning the full frames, the combs are far less liable to break out than full combs in the Langstroth frames—they being so long that there is great weight of honey and brood between the ends; while the cross bars in my frame obviate that difficulty.

I desire in this connection to allude to two

special advantages gained by close fitting tops, namely, that in opening the hive to remove frames, light is admitted only in one place at a time, namely, where the frame is taken out. The closed tops also prevent the bees from rushing out except where the frame is lifted, and they may easily be driven back by smoke; while, with open tops, they rush out and cover the whole top of the hive.

It is true, my ox is "only a twenty-five cent one;" but I believe bees will winter better in Tennessee, or any other State, in frames fifteen inches deep, than in those only ten.

Mr. Nesbit now mentions the capacity again, but admits that it can be controlled by the division board, and claims that the same is true of the Langstroth, Triumph and other hives. I ask, why is the large capacity of my hive an objection, then? How about the forty-inch Triumph? Measured in the same way, Mr. Nesbit measures mine, it contains, in the body of the hive alone, to say nothing of the upper chamber, 4788 inches.

The objection I have to the shape of the Langstroth frame, is, that if you adjust, by the division board, to the capacity of a small swarm, you give them a space long and narrow, like the hall of a house, running from front to rear; and it is not at all suited to the needs of the cluster. But with a deep and short frame, running crosswise, you may give three or four frames in the front end of the hive, and the bees have their natural heat concentrated where they need it.

I stand at the side of the hive to open it, and find no difficulty. The tops of the frames are close fitting, but *not*, as he says, "consequently one and a half inches wider." Mr. Nesbit ought to know that one and a half inches from center to center of brood combs, is just one-eighth of an inch too much. The native bees by instinct build their brood combs exactly one inch and three-eighths of an inch from center to center. I have never observed whether the Italians allow more space, but suppose they do not.

As to placing the frame in the extractor, may not the top of the frame project beyond the wire support, and thus the comb rest on it? It does so in my extractor, and thus the "sweet job" has never come. But how about the Triumph frames, which are close fitting on three sides?

Now the cross bar objection, that it is placing wood where brood is needed. Reply: The cross bar is *not* "in the center of his frames," and the brood is all below the cross bar, as there is abundance of space there. But if the cross bar were left out of my frame, the comb would not be as liable to break as in the Langstroth frame, for the reason that the long way of the comb in my hive is vertical, and consequently fastened to the frame on both of the long sides of one entire end; whereas in the Langstroth frame it is fastened only on one of the long sides.

Mr. Nesbit now asks: "How does Mr. Condit propose to ventilate his mammoth hive?"

Reply: There is abundant ventilation provided by the two end entrances, together with the inch fly holes in the center of each end. An air space can easily be provided over the tops of the frames by resting the corner on cleats, so as to raise it an inch or two. And if it is desired

for further protection, make the sides double-walled, with an air space; it will not interfere with the essential features of the hive. But I have found no difficulty with heat.

With the best of feeling, &c.,

W. C. CONDIT.

Howard Springs, Tenn., Feb., 1872.

[From The Mail.]

### Beekeeping.

Bees well deserve to take rank among the live stock of the farm, yet it is a rare thing in this country to see an apiary of any sort or size; while in Britain a place would hardly be considered properly stocked without at least a few hives. With the exception of wintering, it is as easy to keep bees here as in the old country, and quite as profitable. Nor is the difficulty of wintering by any means insurmountable, if the nature and habits of bees are studied and accommodated.

All parts of the country produce honey-yielding flowers, and in some localities such flowers are very abundant. Where white clover, bass-wood trees and buckwheat are plentiful, you have a perfect paradise for bees, and a vast storehouse for honey. Probably there is no locality where bees may not be kept with advantage; while there can be no doubt that, in some places, they would, for the expense and trouble involved, be the most profitable stock a farmer could keep. A fair estimate of the amount of honey that annually goes to waste for want of bees to gather it, would be positively startling. There are probably two hundred thousand occupants of land, from a small holding of an acre or two to full-sized farms, in the province of Ontario, and if each of these raised but fifty pounds of honey per annum, it would add a million dollars to the aggregate value of our provincial products. A single hive of bees, well-managed, may be counted on to yield fifty pounds of honey every year. Indeed, many beekeepers now-a-days would scout that as a very small yield. Single colonies have produced from four to ten times that quantity in a single year. Still, an average of fifty pounds is far beyond what ordinary beekeepers obtain, simply for want of knowledge and skill. In no department of rural affairs has greater progress been made of late years than in beekeeping, though but few comparatively have kept pace with the onward march of things in agriculture.

We supposed just now that every occupier of land, from an acre to five hundred acres, kept a single hive of bees. But why should he not keep half-a-dozen or a score? And why should not every person possessed of a garden, however small, have one or more bee-hives in it? We have known bees kept profitably on the roofs of buildings in cities. At present, and for some time to come, there is no danger of overstocking the country, while it is undeniable that enormous waste is going on through neglect of this branch of rural industry.

Fear of being stung is probably the great hindrance to beekeeping becoming more general. A bee sting is no joke, it must be acknowledged. It is a rather more serious affair than a mosquito bite. But there is far less danger of being stung than most people imagine. The common idea, whenever a bee is seen, is that it is very hazardous to be near it. Many think every bee they meet with is intent on stinging them if they can. But the reverse of this is the fact. "The little busy bee" has other and better business on hand than to be stinging people, and rarely if ever, does this without provocation of some sort. If struck at, as it too often is, it will surely retaliate. If interfered with in any way, and particularly if irritated, squeezed, or crushed, it is sure to sting. That good Bible rule, "study to be quiet and to mind your own business," is especially to be observed when among bees. In all operations that expose one to bee-stings, there are simple precautions by taking which all danger may be avoided. A few puffs of smoke from a bunch of burning rags, a pan of chips, or a bit of rotten wood, will usually quiet a colony of bees, so that it can be handled with impunity. A veil of some sort, and a pair of sheepskin gloves, will completely guard an operator from the much-dreaded stiletto of the little honey gatherer.

We shall return to this subject ere long. Meanwhile, in addition to the advice to all and sundry to *keep bees*, we beg to add a few very useful counsels.

1. Do not go headlong nor wholesale into this or any other branch of rural industry. Be content with small beginnings, and take time to gather experience. Commence with one stock of bees, and before you buy even one, get some recent treatise on beekeeping, and "post" yourself, at least in regard to the outlines of apian science.

2. Begin with a movable frame hive of some sort. Bees have been kept advantageously, and may be still, in straw or common box hives; but to attain the best results, a movable frame hive is necessary. This kind of hive admits of access to the bees, control over them, and from one season's observations in such a hive more may be learnt about bees than by keeping them twenty years in straw or box hives. Such a hive as now recommended, can easily be obtained from some of our provincial apianians, such as Thomas of Brooklyn, Mitchell of St. Mary's, Losee of Cobourg, Nicolle of Lindsay, &c. A single stock in such a hive will cost about ten dollars, inclusive of patent right, and surely this is not an investment, to begin with, that need frighten anybody.

3. Do not expect sudden and wonderful profits, nor be discouraged by reverses. There is no speculation in beekeeping, any more than in any other branch of moral economy. But, after some years' experience, we firmly believe there are few directions in which labor and money can be judiciously expended with more satisfactory returns than this. Here, however, as elsewhere, diligence, care, energy, and perseverance are essential to success.

### Instinct in Bees.

We give below various extracts from a recent work by Prof. Chadbourne on Instinct.

"In the bee and wasp and hornet, we have the instrument for defence, the poisonous secretion, and the instinct to render them effective. But in the honey-bee, we have much more than these provisions for defence. Its instinct leads it to store honey for use in winter. We pass now the complicated but special apparatus that enables the bee to gather the honey, to consider the conditions that enable her to store it. After being gorged with honey, she secretes scales of wax under the wings of the body. This substance essential to the economy of the bee-hive, is not produced by any work of instinct, but by a peculiar function of the body. These scales of wax the bee softens, undoubtedly, by another peculiar secretion, and then fashions them into a cell that has challenged the admiration of the world.

Let us trace this process through. There is an instinct for gathering honey and, answering to it, an instrument just fitted for drawing it up from the nectaries of flowers. There is also a sack for holding it and for producing certain changes in it. There is an instinct for storing this honey and a substance secreted that can be moulded into cells to hold it. There are instruments given for using the substance to the best possible advantage, and instinct to guide in the best use of both instruments and substance.

Instinct comes in the proper place to link all these agencies together. Let a single link be wanting and all other parts of the chain are useless as a means of preserving the species. And complicated as this whole process is, it is only a part of a connected series of functional and instinctive adjustments, absolutely essential to honey-bee life, as the species now exist.

\* \* \* \* \*

But we may now come to consider certain social animals that cannot exist, except as communities. There is, in some species, such difference in structure and function, and instinct in individuals of the same communities, that there is a division of labor marked out, and made necessary by the very nature of these individuals. The peculiarities found in some species that make the organization of the community most efficient, are destructive to isolated individual life.

Of such animals, the honey-bee is a good example, and the best known. We have in this species, the queen-mother, the drones or males, and the workers; in the latter of which there is no power of reproduction. Without the queen-mother there could be no continuance of the species, as she alone produces all the eggs for the swarming hive.

The queen and the drone, it would seem, would alone be sufficient to secure the continuance of the species. But not so; for they do not even collect honey for themselves, to say nothing of their numerous progeny. To complete the organization of the hive, there must be another class, the workers, which shall collect

food and do all the work of building for themselves, the queen and young. The conditions for an organized community are now complete. The great mass of individuals in the hive, gain their reputation for industry by working for the common good,—for queen and drone and young,—as well as for themselves.

And to this complicated organization, the instincts of each individual are adjusted, so that each performs its part, as each organ of the body performs its office or each official would perform his part in a perfectly organized kingdom.

\* \* \* \* \*

Mr. Darwin thinks the wonderful instinct of the honey-bee, by which it builds cells that he acknowledges, could not be improved upon, might be accounted for in this way: The making of wax takes a great deal of honey; and so it would come to pass that those swarms of bees which build with the least wax, would have most honey left for winter, and so be most likely to live. The best builders would in this way be preserved, while all the poor builders would in time die off.

Here it will be observed that the theory does not go back far enough to account for the whole case. At most, it simply offers an explanation of the preservation of those swarms made up of the best builders. But we want to know *how the bee became a builder at all?* And how the instinct to build cells and the function of secreting wax fitted for the work began together? And how the honey-bee got along before it had either the function or the instinct, both of which now seem essential to its very existence? Then we have also to observe that it is the neuter bees that secrete the wax and build the cells; and since the neuter bees are sterile, the characteristics they possess and the skill they acquire, cannot be transmitted. All the bees that build cells and gather honey, have descended thousands of years, at least, from parents that never did anything of the kind.

Now this, Mr. Darwin would probably say was a case of correlation. That is, it is true the parents do not do these things, but these powers of the neuters are so correlated to the needs of the community that the whole species become good builders by natural selection, because these swarms alone are preserved where such neuters are produced as get along with little wax and consequently with little loss of honey. He makes his explanation of the existence of the instinct that constructs hexagonal cells, and turns on the fact that the bees must live over winter.

But let us consider the work of the wasps in the light of this theory. They do not use up honey in making their cells, and they do not live over the winter, so that natural selection has no chance to preserve the best builders through any such means as might be urged in the case of the honey-bee. The wasps perish every fall, excepting a few fertile females that desert the nest and live in some hiding place, as we have before explained, to commence the new colonies the next year; and yet several species of wasps and hornets build six sided cells, like the honey-bee.

There is nothing that aids at all, in the selection theory, even as Mr. Darwin has attempted



to apply it to the honey-bee. Both of the means through which he attempts to show that natural selection acts in saving skilful builders—the saving of honey in making cells of the best pattern, and the necessity of the honey so saved, for winter use—are here wanting; and yet the wasps are as skilful mathematicians as though the existence of the species depended upon an angle of the cell.

The plain truth is, we have bees and wasps building in many different ways. Each method is connected with a peculiar structure and a whole train of instincts."

[For Wagner's American Bee Journal.]

#### Successful Destruction.

As I have achieved a remarkable success in reducing the number of my swarms from about fifty to two in a single season, I will give as nearly as I can the means by which it was accomplished. In the spring of 1870, I had eight rather weak swarms, which I increased that season to twenty-five, making the last swarm the last of August. Of course they were weak, and were reduced to sixteen by death. With these sixteen I commenced the spring of 1871, determined not to continue making swarms so late that they would not have time to strengthen up for winter. So I stopped multiplying about five weeks earlier than the previous year, making eighteen swarms in July, closing up the 21st. These of course could strengthen upon buckwheat and fall flowers. But the drought dried up the sources, and no honey was obtained after about July 12th. Within about fifty rods of the apiary was an extensive cider mill, where the bees perished in large numbers and where they obtained what is considered by some a fertile source of dysentery, cider.

So I had about fifty swarms, all weak except one which had combs running crosswise, and consequently had no frames taken out. For some reason, I hardly know now whether through stupidity, want of time or carelessness, I did not feed them till quite late. In this condition, weak in bees and stores, with cider and honey unsealed, they were left on their summer stands until December 10th, when after a couple of weeks of very severe weather, thermometer as low as 10 degrees below zero, they were put in the cellar. For fear the treatment already received would not be sufficient to demolish them, the majority of them were left piled up in the cellar without any ventilation. February 11th, I took out five which flew a very little and I put them back again. February 22d was a little warmer and I took them all out finding twenty-three alive. They flew somewhat and I left them out. Soon after a cold storm came on them with snow a foot deep, and by the 1st of April three were left, one with frames running crosswise apparently in good condition, and two very weak, which I have to-day commenced to unite, finding it too slow work to build up.

Now, I think this is a case of successful de-

struction, still if I had to do it over again, I am not sure but I could do better. I think I could kill the other three.

For the benefit of any one who has not had experience, I will give the following points to be kept in view:

Divide your hives constantly to their utmost limit, so as to keep *all* weak, *all* the time, keep them weak in stores as well as bees, and if you feed at all let it be very late in the season.

Let them stay on their summer stands until winter has fairly commenced, then take them in whilst they are frozen and bring them out again in time to have two or three weeks of winter weather.

If you can think of some other stupid thing to do, such as moving them about after they commence to fly, setting honey near the hives to induce robbing, &c., it will be an addition to the above. It will be some help toward fulfilling these conditions, if you have so much else to do that you can seldom see your bees.

C. C. MILLER.

Marengo, Ills.

[For Wagner's American Bee Journal.]

#### Wintering Bees.

Last fall we fed our bees with sugar-syrup until each hive had about ten pounds supply, and put them in our cellar bee-room December 1st, scarcely doubting that they would take their annual nap and wake up in the spring as usual, but a recent examination disclosed the melancholy fact of eight stocks having starved to death, a greater loss than we have experienced for five years, and, of course, we felt correspondingly gloomy about it, and perhaps we might as well confess not a little mortified, too. Our bees consumed so little honey in the winter of 1870-71, that we felt confident that ten pounds was all they needed, and that the twenty-five pound theory was all right for out-door wintering, but for a repository ventilated like ours it was an unnecessary waste of honey. Well our heterodoxy in this case cost us about \$115, and with all due humility we confess our blunder, and faithfully promise never to knowingly undertake to winter a full stock of bees on less than twenty pounds of stores.

As to the comparative merits of sugar-syrup and honey, we are satisfied that there is little choice between them for indoor wintering, when the syrup is given freely and in season for capping. During the last four years we have wintered several stocks on syrup alone with the best results.

Hereafter we shall adopt the suggestion of Rev. E. L. Brigg, and winter in November 1st, as we are confident it will save honey, prevent mouldy combs and consequent loss of bees. We find much dampness and mould in all of the hives that wintered with frost in them, while those that were dry are now in the best possible condition. In our latitude there are but few days after November 1st warm enough for bees to fly, while the nights are all cold and frosty, causing

a large consumption of honey that ought to be saved for spring (especially where the beekeeper is green enough to winter in on ten pounds), by placing them indoors on or about that date.

Sometime last fall we predicted that beekeepers in this section would experience a greater loss of bees than for twenty-five years past, and judging from reports from all quarters, this prediction has been verified. The year 1871 has been bad enough. Thousands of stocks not only failed to store any surplus, but actually went into winter quarters in a starving condition, consequently bees will be scarce, and those who succeed in getting them through (if Mr. Hazen's overstocking theory is true, which I greatly doubt) may hope for good results. \* \* \*

G. S. SILSBY.

Winterport, Me., March 2, 1872.

[For Wagner's American Bee Journal.]

### Eggs in Queen Cells.

As this is a problem not yet satisfactorily solved, I will throw in my mite, gleaned from careful observation. In dividing a colony of bees, I removed the queen and a few frames of brood from the parent stock, leaving it without queens or queen cells, my object being, to have them rear a number of queen cells for queen raising. I put in frames of nice old comb in place of those removed, comb that had not been in colony of bees for months. Some days after in examining the hive I found a number of queen cells sealed over, *one of which was on one of those old combs*. I took particular notice of it, as it struck me as being something singular. That seemed to me clear proof that the bees will transfer eggs from one cell to another for the purpose of queen raising. I think it yet remains to be *clearly proven* that queens will deposit eggs in queen cells and that such eggs will produce good queens. Brethren let us have more light—not the light of theory only—but of demonstrated facts.

J. S. FLORY.

Fayetteville, W. Va.

[For the American Bee Journal.]

### Cannot West Virginia have a Convention?

Apiculturists of West Virginia cannot we devise means to meet together and have such a concert of action as to induce the people of our young State to enter into bee-culture with an earnestness that will show to our sister States we have one of the best sections in the United States for bee-culture? It is a source of wealth we hope soon to see developed. Light on the subject is what the people want. Shall we then with one voice say, "Let there be light." We solicit correspondence on the subject.

J. S. FLORY.

Fayetteville, Fayette Co., W. Va.

[For the American Bee Journal.]

### Imprudence of Beekeeping.

This may seem an impertinent heading, but I select it as appropriate to my few well-meant remarks. It does seem to me that in some respects the improved beekeepers of the country are among the most imprudent of business men—and women too, if you please. Finding their avocation recreative, healthful, interesting and in a measure profitable, it seems a large majority of them are doing all in their power to make converts and get everybody else into the business. This is too true of the older members of the calling, but more especially so with the younger ones. It is not uncommon for "beginners" (besides parading their much exaggerated "notes" in print to the disgust of experienced beekeepers and to the astonishment of the rest of mankind) to convert a dozen or a score of other new beginners in a single year. What other class of business men would be so much interested in making competition? Now, that a publisher of bee literature should want to increase the number of beekeepers is but natural, legitimate and consistent with his interests. And, too, it may be consistent for men selling patented bees and patented bee hives to do so. But for the honey producer to do so much to increase competition, seems to me the most supreme folly and an unpardonable business blunder. And pray what objects can there be in it? I see but two; one to show the gaping bystander or reader how much the "great bee man" knows; the other to tell folks that "he is making money out of his bees." Nor is this, what I believe to be great mischief, all confined to the thousand and one local small men scattered throughout the country. Men who would be leading lights, and some who *are* leading lights, shine sometimes entirely too brightly. The reports of these big yields and large profits—most of which are outrageously exaggerated—going the rounds of the newspapers, are "waking" multitudes of men "up to the profits of beekeeping." And suppose, fellow beekeepers, that our numbers increase for the next ten or fifteen years as they have in the last two years, where will be our market? Yes, where will we be in the short space of five years? I am familiar with the old idea that extensive production makes ready market, and it may be true, as regards staple articles, but I am satisfied it will not be so with honey, a thing that almost anybody can raise either in the country or in the city.

I concur with some of the sensible writers in the February number of the Journal, that it is quite possible to overstock bee pasturage; but I have much more to fear from the present prospect of overstocking the markets with honey. And if I am correct in my notions, I have done no wrong in suggesting to my brother beekeepers to be a little more prudent.

Chillicothe, Mo.

J. W. GREENE.

A fertile queen and good worker comb is the stock in trade of the apianar.—HULLMAN.

[For the American Bee Journal.]

**A few Estimates.**

MR. EDITOR:—I was much interested in the remarks of Mr. A. Grimm in your issue of February last. The difference in the comparative number of swarms from the two apiaries, 105 colonies giving but 68 swarms in his southern apiary, and his northern apiary 43 colonies and increased to 86. I think it is generally supposed that bees rarely swarm unless they have plenty of honey in their field. What would be plenty for 43 colonies would be a comparative scarcity for 105, and would account for the smaller number of swarms.

If we suppose 60 lbs. of honey required for breeding and wintering each hive, we must suppose the amount gathered by the new swarms for breeding and wintering the 105 colonies in the southern apiary to be 6300 lbs. Their product in surplus honey was 6800 lbs. The amount of honey gathered by the bees from that field besides what was consumed by the young swarms, was 13,100 lbs.

If we suppose the average of these colonies to be as good as the colonies in the northern apiary, then 73 colonies would have gathered 4380 lbs. for consumption, and yield nearly 8800 lbs. in surplus. Does not this result render it evident that 121 colonies were overstocking the field?

2. The 103 colonies gave but a little over one-half in surplus, the 43 colonies gave two-thirds. I think it probable that 63 colonies would have given more surplus than 73 colonies.

Is due attention given to this part of our honey business? No doubt that when the honey is taken from the flowers, more is secreted, but it is not secreted probably in a constant stream so that bees may find a full supply from one flower, and another as soon as the first is sated, and then another. Instead of this we find, when a bee has visited a flower, a second on trial will leave it at once. Sometimes a dozen white clover heads will be visited before one is found unsipped of its sweets. I have counted one bee visiting up to hundreds before a load was secured for the hive.

Albany, N. Y.

JASPER HAZEN.

[For the American Bee Journal.]

**Transferring Bees.**

MR. EDITOR:—In the January number of the American Bee Journal, Mr. J. W. Cramer wishes to know the best plan to work on when transferring a swarm from an old box hive to a movable comb.

I will give my plan. It appears he has trouble in getting the bees out of the old hive. His plan is a troublesome one, at the same time there is danger of losing the queen and a great many young bees.

I use a box, called a forcing box, which I will describe as follows. I make the box 16 by 16 inches at the bottom, 16 in. deep. and 8 by 8 in. at the top, making saw cuts in the top to give

ventilation. Spring in some cross sticks for the bees to cluster upon. When I get all things ready, I go to the hive I wish to drive out, and puff in a little smoke from cotton rags, which starts them to eating honey. I give them a little time to fill themselves, at the same time let as many of the bees, as were out at work, in as possible before moving the hive. I then carry it off to some suitable place, invert it on the ground, and put on the forcing box, tie a table cloth around the hive and box.

I hold up one edge of the box, to tap on the hive to start them up; in fifteen minutes you have all the bees up with the queen, clustered in the box. When you have all the bees out, untie the cloth, spread it on the ground, take off the box that contains the bees set in the cloth, bring up the corners together, tie them fast, and carry them back to the old stand for the bees to cluster on that were out when the hive was moved off; prop up one side to prevent smothering the bees; keep the hive in the shade.

Now you have all the bees out of the way, you can transfer the combs without having the bees crawling over the combs daubing themselves with honey.

Sometimes we have to transfer in the cellar, in order to get out of the way of robbers, if we should undertake this with all the bees in the hive, I think it would be a difficult matter. When I get the bees out and secured, I split the hive open, cut out the combs carefully, place them on a table, cut them to fit the frames, tie them in the frame with cotton twine; set them in the new hive as fast as filled. When we get all the combs in, we move the box off, set the hive on the old stand, untie the cloth, draw one edge under the hive, spread it out smooth, shake off the bees, and let them crawl in, just as you would a natural swarm.

I have transferred hundreds of swarms; over a hundred last season in this way, and never met with any trouble. I have transferred from April to September without any trouble.

Monroe, Iowa.

J. W. SEAY.

[For the American Bee Journal.]

**Beekeepers of Central Illinois.**

A special meeting of the Beekeepers' Association, of Central Illinois, was held at Hudson, McLean county, May 24th, 1872.

**MORNING SESSION**

called to order by Vice President J. V. Brooks, of Lexington.

The minutes of the last meeting were read and approved.

On motion, Messrs. J. L. Wolcott, Charles McGrew and A. Ogsbury were appointed a committee to prepare subjects for discussion. While the committee were absent the following questions were answered:

1st. How to get rid of fertile workers.

2d. How to successfully introduce a queen.

J. V. Brooks replied as follows: To get rid of fertile workers, take two frames containing



brood, with the adhering bees, place them in the center of the hive containing the fertile workers.

To introduce a queen with success, put the queen with a few of her own workers, into a small wire cage, having the opening at one end stopped with wax; suspend the cage in the center of the hive; if the bees fail to release the queen within forty-eight hours, assist her by reducing the quantity of wax at the end of the cage.

Upon invitation, a number of those present signed the constitution and became members of the Association.

The committee on subjects then presented the following subjects for discussion:

- 1st. Hives and summer management of bees.
- 2d. Are Italians preferable to black bees?
- 3d. Are honey extractors beneficial?
- 4th. The best mode of uniting bees.

Mr. Brooks then opened the discussion on hives by recommending the movable comb hive, as the only hive that should be used, the preference being given to the hive in which the bees could be handled with the greatest ease and profit.

Mr. McGrew agreed with Mr. Brooks on the movable comb hive, even though the bees should build their combs crosswise in the frames. Combs should be changed once in two or three years. He then exhibited a model of his hive, and spoke at length on its merits.

Mr. Benton, of Michigan, said the larger the colony, the more profitable will they be; they need protection as well as cattle, &c. He has a hive claimed to be proof against moth and insects, from the fact that it is used suspended by a bail or handle to the limb of a tree or other suitable place, with open bottom.

E. A. Gastman, of Decatur, did not believe that the moth does the bee any injury, as when the moth is formed the damage is done; it is the caterpillar that does the harm.

Mr. Benton said the moth would eat through the combs and spin their webs and thus injure the combs and bee.

J. V. Brooks said the moth works not among the old bees and honey, but among the brood and young bees, thus working destruction to the colony. Strong colonies are safe against the ravages of the moth. Bees should be handled only when necessary and when the temperature of the air is warm. If some colonies have more stores than needed, divide with the needy ones, or feed them with sugar syrup. Take off boxes as soon as the bees cease working in them, thus preventing the soiling of the comb. Put on boxes as soon as the honey season commences.

Dr. J. Johnson, of Hudson, thinks there is a difference of opinion with reference to the moth attacking the bee and the bee attacking the moth.

Mr. Wolcott said that bees will attack the moth; also recommended salt for the destruction of ants, and that bees have a supply of water.

Mr. Gastman has seen the bee attack the moth and carry it off from the hive.

Mr. Ogsbury said bees will cut out comb containing moth; also attack the moth worm.

J. W. Gladding, of Normal, was asked to explain the merits of his round honey-box, but not having a model, distributed his circulars among those present.

Adjourned to meet at two o'clock.

#### AFTERNOON SESSION.

2d. Topic.—*Are Italians preferable to common bees?*

Mr. Gastman thinks them better; they gather honey when the black bees will not, and are more prolific.

Mr. Ogsbury's experience is that the Italians are far superior to the black bees.

Mr. Brooks said that some years the Italians will work on the second crop of red clover.

Dr. Johnson said his theory was that the Italian bee would eventually run out.

Mr. Brooks' views were far different from that of the doctor. He thought the old-fashioned bee would have to get the stripes upon his back or leave the country.

3d Topic.—*Are honey-extractors beneficial?*

Mr. Wolcott would not be without them; they are beneficial.

Mr. Sawyer—The honey extractor needs no defence; it speaks for itself in the saving of comb and honey, and is of great advantage to beekeepers.

The Atkinson & Barber extractor was exhibited by Mr. Wolcott, of Bloomington. The Peabody extractor by Mr. Sawyer, of Normal.

Mr. Brooks has used the honey-extractor with entire satisfaction, yielding him a profit of at least 100 per cent. in honey, and nearly all the combs, which is a great economy, as it takes about twenty pounds of honey to make one pound of wax.

4th Topic.—*The best manner of wintering bees.*

Mr. Wolcott commenced the winter with one hundred and forty-five colonies; kept the most of them upon their summer stands; lost but three colonies; would recommend wintering upon the summer stands, with proper protection.

E. A. Gastman at the beginning of winter had thirty-eight colonies; has now not to exceed ten colonies, but less in proportion among those wintered on their summer stands.

J. V. Brooks reports a loss of seven out of forty colonies wintered in a bee-house; disease, in part, dysentery; is at a loss to explain the cause of the great loss among bees this winter; found sour honey in the capped cells.

Mr. Sawyer, of Normal, reports a loss of about fifty out of about seventy colonies; cannot tell the cause.

A number of others made reports of about the same average loss.

5th Topic.—*General remarks on bee-culture.*

It is necessary to put bees in the spring on the same stand they occupied the previous year. No danger in moving bees one-half mile or more, this season of the year. Artificial better than natural swarms in some cases. Strong colonies needed for surplus honey. Cleanse old, unclean combs by exposing them to the fumes of burning sulphur.

The following resolution was then adopted :

*Resolved*, That this association return their thanks to all the papers which have published the notice of this meeting. Also to the citizens of Hudson for their kindness and hospitality, and giving the use of their school house for the use of this association.

On motion the Convention adjourned to meet at Lexington, McLean county, on the 18th of July, at 9 A. M. Ladies are particularly invited to attend.

J. ANSLEY, *Secretary*.

J. W. GLADDING, *Corresponding Sec'y*.

[For the American Bee Journal.]

### Gallup on One-story Hives.

The May number of the Journal is just at hand. We are certainly sorry that we cannot make Novice understand us, but we have surely failed thus far. No, Novice, we are going to try another plan, and see whether you cannot get our idea into your head, and in the meantime send twenty-five cents to D. L. Adair, for Progressive Bee Culture, and that will probably help you a trifle, as Mr. Adair and Gallup have arrived at nearly the same conclusion with our new ideas.

When the flush of honey comes on is the time that the queen would breed the most, if properly managed. But as they are usually managed, the honey gatherers encroach up the brooding space, and instead of giving the queen more room at the time she requires it, she is restricted in her breeding. This is the reverse of what it should be. Now scratch your head and try to take in our idea. We don't care a straw what kind of a hive you use. Now we want a large amount of bottom combs; therefore we do not want a two-story hive, for the queen prefers to keep her brood (we are going to use Mr. Adair's language, as it is most appropriate) at the bottom of the combs in midsummer, and contrary to our previous notions we find that the more prolific the queen the more brood there is raised; the better the balance of the stock is kept up, the more the workers are stimulated to action. *Understand us*. If brood hatching is not kept up rapidly and abundantly, there is soon a disorganization of the forces in the hive. It is the age of the bee that determines the occupation. Now take an ordinary ten-frame Langstroth, such as you use; get the queen to breed in all parts as much as possible, until you have what you call a rousing stock; now have a Langstroth made double-width, to hold twenty frames, all on the ground floor. Place your stock and comb in the centre; now you have room for five combs on each side. Fill up with good, nice, straight-worker combs. We will suppose the queens want more room; move the brood apart and insert one empty comb right in the centre, and keep doing so at regular intervals as required, and in the meantime (by means of the extractor) keep the honey out of the way in the outside combs, and see if you

cannot get up a larger and stronger stock of bees than you ever had before, providing the honey harvest is good at the time.

It is the new idea that we wish to beat into your noddle, and not *the style of hives*. With this management, or this idea, we can get up a stock of bees that will gather honey rapidly all summer, providing the forage holds out abundantly. By this idea, properly carried out, we check all disposition to swarm, and keep the queen breeding up to her full capacity. As bees are usually managed, if we get up an extra strong stock right in the midst of the honey harvest, the disposition to swarm decreases the production of honey to a great extent. Now, if we can get up stocks as strong as we usually did, and prevent all disposition to swarm, we have gained two important points toward an extra large yield of honey.

Old Mr. Hazen has been laughed at considerably, but I think the old gentleman has some very good ideas, if properly carried out, as well as some that are not so good. Mr. Hosmer, Adair, Grimm, Butler (of Jackson, Mich.), Langstroth, Gallup, and we don't know how many more, have come to the above conclusion. That is, strong stocks for strong surplus honey. Yet we don't know that all of them have our ideas about raising the bees, and keeping them to work right when they are raised, and that, too, in such extra strong numbers as Mr. Adair, Hosmer and Gallup do. We see Mr. Furman is considerably excited, but we guess he will live through it. He will probably feel better after blowing off steam a little. Keep as cool as you can, friend Furman, it will be better for your health. We firmly and sincerely believe that the man is now living that will get one thousand pounds of honey from a single colony in one season, and if from *one why not from more*. Now, friend Furman, your calling him a liar will not alter the fact one particle. E. GALLUP.

Orchard, Iowa, May, 1872.

[For the American Bee Journal.]

### Answers to "Enquirer."

In the May number, page 352, Enquirer asks why it is necessary to keep until after sunset swarms that are to be doubled or to be returned?

Answer.—It cannot be done in the daytime without great risk of quarreling. We have several times, and lost the entire swarm; but after sunset they unite in peace; therefore we leave all such swarms, and leave them just where they were until we unite them.

As we stated in the February number, the basket hiver is simply a common peach basket, with the bottom bored full of holes, and the slats that form the sides about half cut away, to make it as open as possible. Now stick in the inside a goodly number of strips of comb, about an inch wide and two or three inches long, all over the inside, for the bees to cluster on. Nail a leather strap on the outside of the bottom, seven inches long, with a harness snap sewed to the end of

it. You then want two or three different lengths of poles, with a ring on each one, to fasten the snap to. As soon as the swarm begins to light, let about half of them cluster; now jar the tree with the butt end of the pole to make them take wing; again put the basket in the spot where the bees begin to cluster, and they will enter the basket. Then carry them to where you wish to hive them.

J. BUTLER.

Jackson, Mich., May 14, 1872.

[For the American Bee Journal.]

### Inquiries.

Will it be safe to use for new swarms honey from hives in which bees have died from dysentery?

I have lost more than half of mine by this disease in movable comb hives, and if I can use them again I will be able to save something. Your correspondent, who thinks that bees died of dysentery caused by honey dew from the beech, fails here, for there is not a beech within one hundred miles; and I think that beekeepers have lost fully fifty per cent. of their colonies, and certainly not from that cause. It has made no difference whether they have been in-doors or out; the only exception to this is the case of one man, who gave his bees a chance to fly in February. He did not lose a swarm.

S. P. BALLARD.

Sharon, Wis.

Bees have wintered very poorly in these parts. About one-third or a half died during the winter, and many swarms have left their hives. I am not surprised that the bees left such things. Out of one small hive ten pieces of timber crossed in all directions, so the bees had to brood on timber, some of them as thick and broad as two fingers. Hardly four inches of straight comb could be found in the whole hive. Such a place might do for chickens to roost in, but it is a very poor place for bees to breed in. Another hive I looked at was about eight inches wide, ten deep and fifteen long, with a partition across the hive which confined the queen to one end, and the other end was all drone comb. They had tried it one summer, and were satisfied it was best for them to leave such a thing.

I find that bees feed better on fine ground Indian meal, mixed with bran, than they do in either rye flour or the cleanings from the smut mill. I had three boxes containing the three different articles, and they preferred the corn meal and bran.

I gave one of my hives last September some Italian eggs to raise a queen. When I opened the hive this spring I found a large number of drones, but they have now all disappeared, and a fine specimen of workers appear. It is one of the strongest hives I have. I intend trying W. R. King's fertilizing tent this season. I may report the result.

J. LUCCOCK.

[For Wagner's American Bee Journal.]

### Natural, Hardy and Prolific Queens.

ANSWER TO MR. JOHN M. PRICE.

A renowned French lawyer has written somewhere: "Give me ten lines of the writing of an honest man, and I will send him to the gallows." Of course, to obtain such a result, it was necessary to be able to give the words contained in these ten lines another meaning than that intended by their author.

Mr. Price, in his last article, in the June No. of the American Bee Journal, has gone further with me, for not only by the interverting of the extracts does he change the meaning of my letters, but he has falsified them also. For instance: I have written, "I am very little disposed to sell you any more queens," and he copies to let you (have) any more queens. As I have already stated in the March number of the American Bee Journal, the same John M. Price, in a letter dated July, 1870, asking for another queen, writes: "If you can send the queen let me know with price." Mr. Wagner has that letter in his hands. I have sent it to him with another of Mr. Price's letters.

In the July, 1870, letter, I answered that I knew the queen I had sent was prolific, and that Mr. Price had ill judged her, and, that with spring, she would prove very prolific, &c. Two months after, I received another letter, dated October 12th, 1870, in which I read: "Please send me a queen that you know from experience to be good, pure and prolific, either Italian or of your own raising. C. O. D. (collect on delivery), send Monday or Tuesday. Signed, J. M. Price."

I answered that I had no queens to spare; and that as soon as the bees could raise queens in the spring, I would send him one, but at the same time I gave him the advice to get one or two imported queens. This queen or queens were of course to be sent according to Mr. Price's own terms, i. e., C. O. D.

I beg the reader to remark that the second paragraph of my answer which refers to the imported queens is put purposely without date, and, coming after my letter of April 21st, 1871, while the whole was written about October, 1870. Meanwhile the discussion between us on the artificial queens continued and the laugh being on my side, as we say in France, Mr. Price lost his temper, and, finding no good reason to combat mine, he concluded to attack my honesty.

To put an end to the personal dispute, for which I beg leave to offer my excuse to the readers of the Bee Journal, I offer to Mr. Price, that, we both should send all the letters in our possession to Messrs. Langstroth, or Gallup, or Novice (A. I. Root), or Nesbit, or Quinby. All these gentlemen are well known for their honesty and impartiality. If the gentleman chosen by Mr. Price, among those named, judges that I engage myself to replace the queens in question, then I promise to send ten tested queens to Mr. Price. I will add this condition: The verdict shall be inserted in the three Bee



Journals published in this country at the cost of the loser.

Mr. Price has said to a well known beekeeper, whom I can cite, that he was anxious to get himself a name in the bee-keeping fraternity. I hope he will seize this opportunity of seeing his name in the three papers with pleasure.

CHAS. DADANT.

[For the American Bee Journal.]

#### Bee Notes from Alleghany County, Md.

MR. EDITOR:—If you will permit me I will give you a few notes on bees in Cumberland and the surrounding country:

Bee-keeping is in a backward state in this section, that is improved bee-keeping. Some have sold all their bees because they have moved to town, but that is no excuse, for I live a quarter of a mile within the city limits, and my bees work just as well as they would if they were in the country. There is no better field for bees than Alleghany County. The first honey we get here is from locust, which blooms about the middle of May and lasts about a week, and is crowded with bees from morning till night. Next is white clover, and then mustard, which I think is just about as good a honey producing plant as can be found anywhere. It blooms during the whole summer, wet or dry, and is visited by swarms of bees during the whole day. Indeed, I believe the bees prefer it to white clover. The honey is rather red, but clear, and I can get more honey from it than any other plant. Linden blooms here about the first of July and lasts about four days. I believe it produces the best honey, but it does not last long enough. Before the bees have time to gather much of it it is all gone. If it would last as long as mustard or white clover, it would exceed both in amount of honey. While linden is in bloom there are not many bees to be seen on other plants. There is quite a grove near this place along the Potomac on the Virginia side, and some are planted along the streets of the city for shade trees, and so there is an over supply of honey for the number of bees kept here.

As I told you before, I lost seven stocks last winter, and I saw in the last number of the Journal, a remedy for the disease they died with, namely: to extract all the thin honey that is not capped over, and if there is anything in it, I will try it. I think I will purchase a honey extractor, for I have some trouble to get the bees to work in boxes. I do not know whether my bees died with a disease produced by this thin honey or not, but I noticed that those stocks that died, had some of it. I left the strongest stocks out on their summer stands and they came through strong and healthy, but those I put in a nice warm house are the very ones that died. Did not these I left out gather as much of this honey as those I put away, and, if so, why did not it kill them, also? Can any one answer that question? I believe that it is a proof that bees will winter better on their summer stands

(protected from cold winds) than they will when put away, for I never until the last winter, put my bees away and I very seldom lost any. I do not want beekeepers to leave their bees out because I did, for others might succeed just where I failed. I am going to try artificial swarming this season, but have met with some reverses already; first, I cannot get many queen cells capped over, and those I do get, after the queens hatch, are lost when they fly out.

To-day the bees left all the nuclei I had and joined in one swarm. I put them into a hive, and as I thought it had come from one of the hives, as a young swarm, I put it upon the stand. But after I went to look at my nuclei I found all the bees gone, and then I knew where the swarm came from. They had killed all the queens, but one, by that time, and therefore, I have got only one queen to commence swarming with. What puzzled me most was why the bees left the nuclei and joined into one swarm.

C. E. WIDENER.

Cumberland, Md., May 24th, 1872.

[For the American Bee Journal.]

#### Wintering Small Colonies.

I read an article from Mr. Hosman, saying he divides his strong colonies making three or four out of one, not using over a quart of bees, if he has more he would shake them off on the snow. I think this is calculated to lead new beginners out of the right channel, for that suits most new beginners, for increase is their aim; here is where so many new beginners have failed. When movable comb frames came in use, they thought they could increase their colonies, whether they would or not; they weakened them, however, so much as to give a foothold for the moth which destroyed their bees, then the patent hive got thunder. My plan has always been to keep my bees strong; they winter better, and come out strong early next season. Mr. Hosman may be right, but it seems to me he is trying to take a near cut.

I don't intend to criticise him, I just want to caution new beginners to go slow, to keep their colonies strong both winter and summer, that is my experience. I have tried wintering small colonies when I had queens in the fall that I wanted to keep over, but generally lost them. I will close by saying, keep your bees strong. Aim at a moderate increase, and you will find your increase more rapid, than by striving to do too much.

Monroe, Iowa.

J. W. SEAY.

Mead.

Will some one of the many readers of the Journal, give a recipe for making this agreeable summer beverage.

GEO. HOWE, M. D.

Pte a la Hache.

Parish Plaquemine, Louisiana.

[For the American Bee Journal.]

## Novice.

DEAR BEE JOURNAL:—Apple trees have blossomed and gone, and for two or three days gave us considerable honey. Locust trees have also been loaded with blossoms, and although the weather has been very favorable, no honey, or none of any account, was collected; of course the bees worked on them, and many hearing their joyous hum and seeing the great numbers at work, said, accordingly, they were doing finely, but a careful scrutiny of the interior of the hives showed, as it often does, that the bees were doing all they could, but each day's labor hardly produced enough to feed the countless thousands of "little ones."

Abundant rains brought white clover in abundance, but even that failed to give the accustomed results until yesterday and to-day, June 12th and 13th.

We had really began to think that we were at last to have a sample of Gallup's poor season two years ago (by the way, will some one tell me what Mr. Hosmer did that season, as he seems from his offers to defy alike bad seasons and good), but at the rate honey is coming now, we fear we shall have no such opportunity for experiments.

To go back to the locust trees, we remember only one good season for them, 1870, when we got about 1000 pounds locust honey, and since then we have had two of which locust trees would hardly bear classing with honey-yielding plants.

It has been many times suggested that we plant a locust forest instead of basswood, but basswood we have proved and tested, and we think it never fails entirely, and on the whole produces more honey than all other sources together.

Our young forest is now under the influence of cultivation and bone dust, just shaking their bright leaves in the breeze as if they would say, "*what fun it is for us to grow!*"

Our queen or queen worker mentioned last month laid about 6 inches square of brood, considerable of which was drone, and then tapered off and slid away somewhere, leaving her small family to do the best they could, and so saved us the trouble of pinching her out of the world, to make room for some one who would preside with a greater capacity for replenishing the empty cells provided for her.

There certainly would have been no difficulty in deciding, as Mr. Langstroth says in his excellent article, page 267, that such a queen as she appeared when first hatched would probably be quite inferior.

In fact, our yield of honey has been furnished a greater part of it from comparatively few hives, and a few also furnish but very little; and we think the greatest reason is the difference in the capacity of the queens; but the fact stands out very plain and prominent, that our *very best* are just as often raised in small stocks or with but few combs or bees, and our artificial queens are certainly the best. One reason may be that they

are always reared from our choicest queens, and natural queens are raised as they happen.

We keep our queens generously until their third year, and some until the fourth, when very prolific.

We are very sorry to see such hard words pass between Mr. Price and Mr. Dadant, and feel sure that both gentlemen are much better men than they would persuade us. In the heat of argument, both are speaking stronger than they mean. Voluntary mistakes, we think, will apply to Mr. Price as well as Mr. Dadant. See p. 78, vol. 6, also.

Mr. Price has been referred to before, and must have known that Novice makes an apparent contradiction, and to be honest, why does he not mention that such is the case? The last statement was made carelessly while we were writing with another topic in view. Nearly all of our Grimm queens were used to replace queens whose progeny were too near black, some quite young and prolific, so much so that we have since regretted replacing them.

And Mr. Dadant, if you would allow us to advise, we should ask him to send Mr. Price a queen to be paid for only when and at what price he will think fair and just. Mr. Price will do what is right and just, we *know he will*. There is quarrelling enough outside; please let us have no more in "our family," be it ever so large.

Mr. Gallup comes down honestly and says he thinks the same result might be obtained with regular Langstroth frames, and promises directions for using his principle with the Langstroth frame. We really believe his "hitting us" has something the same effect as the parent who punishes only to "make the child better." If we don't "get better," we certainly get some new ideas, and they don't hurt at all. Many thanks, Mr. Gallup!

The best colony in all our apiary, we believe, is in a two-story hive, frames one foot square (not the Gallup hive), and they are really pretty to handle, just the thing for ladies to handle, but for some other reasons we prefer the shallow frame.

The queen of the colony just mentioned is two years old, and was raised from four combs of brood only, *no bees at all*. The combs were put in an empty hive over night, and next day, very warm weather, so many young bees had hatched out, that we let them go, and they alone raised a queen, and that queen, now just about two years old, we pronounce the *must prole fit in our apiary*. "How is that for high," or rather for Price? We have raised queens the same way before, but it didn't always work. We dislike the bother of cutting out queen cells. Can't some other "Yankee" assist us in devising some arrangement for keeping queens in their cells twelve or twenty-four hours after they are hatched, so that we may save them all. Our device of late years answers, if sufficient care is used, but they are too cumbersome and clumsy.

After they are hatched, we do this way: Take a comb or two of brood from any hive, and the young queen and a few young bees from her own hive, and all introducing is done. When she lays, give them three or four more frames

of brood, and you have a nice colony with little trouble.

Do you wish to know what fun we are going to have to-morrow? Well, listen. We are going to hoe up the few remaining weeds, and level the ground around the hives; put some fresh saw dust about the stands; see how much the new soft white combs have grown over night; look if the thin lazy little chaps have commenced work in our fine English glass shades (that ain't quite box-honey, is it?). Scold those queens that don't get around and fill all empty cells with eggs; scatter ashes over the floor, get our better half's dust pan, brush-broom, tack-hammer, sharp knife; get our pants stuck up with bees-wax on the knees (don't hurt 'em), and get tired out as we are now, and so good-night to all!

NOVICE.

[For the American Bee Journal.]

### Bee-keeping in Central Illinois.

It has been many years since I commenced keeping bees. I came to this State from old Kentucky in 1835. I was then a young man of very limited education and have not learned much since. At that time I turned my attention to bee-keeping, and I succeeded finely for a number of years. I used the common box-hive; never went to look at them, only when they swarmed or when I wanted honey, but when I now look back to that time I can easily see why I succeeded so well with my careless management. At that time a greater part of our beautiful Illinois prairies were as nature adorned them, abounding in flowers of all kinds; bees then found more material than was possible for them to work up. When I used to ride over the prairies and see thousands of acres, the flowers of which were not enlivened by the hum of a single bee, little did I think of ever seeing a scarcity of honey; then was the time for honey, and through its over-abundance strong stocks were built up, which rendered them able to expel the moth, and defend their domicile. But, alas! some fifteen years later all of the beautiful flower gardens had been changed into fields of corn and wheat, and the poor beekeeper's servant was compelled to hunt its goods from other sources, and the result was, the swarms were reduced in strength through the scarcity of honey. Mr. Moth hatched out in their midst and fully developed himself, and took possession of their scanty stores, and the bees died. When fall came on the farmer went out to get his honey, as he had done for years previous: he found a sad state of affairs, hive, comb and rooms were all burned, he declaring that he had no more luck with bees, and would quit it altogether. I with the rest suffered more or less from the disadvantages under which my bees had to labor, and under which I labored in handling them, for then I had nothing more in the way of a hive than a box made of rough boards with a few cross-sticks in it. To-day we have the Langstroth movable frame hive, which I have

used many years, and, the longer I use it the better I like it. I think it affords the greatest convenience in handling, examining and protecting your bees against any obstacle which nature may bring in their way. During the past six months this section of the country has been canvassed by five or six agents of patent hives, some almost identical with those in use. These agents all being oily tongued fellows succeeded in selling a great many hives to uninformed men for the small sum of \$10. If I should ask them that much for a hive full of bees they would think that an outrageous price. During the last four months these agents have been seeking to create a bee-fever. Everybody wants to keep bees, and wants to have them in some fancy hive, furnished with doors and sliding drawers, and in fact everything in the world that would make it appear complicated.

As I am in the book trade, I thought to myself now is the time to sell bee-books, so when I saw a man suffering from that terrible fever I recommended either Quinby or Langstroth's excellent work on bee-keeping, but, so far have not succeeded in selling a single one. The other day an old gentleman who kept bees in his yard for many years remarked to me that he had been expecting his bees to swarm for the last month. I asked him if they had built queen cells. He replied, that he didn't know about that, but had noticed all his life that the king bee couldn't stand much heat, and that during the warm days of spring with the old bees would lie out in clusters on the outside of the hives, which was in every case a sure sign of swarming in at longest four days. He said when they swarmed the king and the old bees left, and the queen and the young bees remained behind. When I heard him go on in this matter, I hesitated what to do under the circumstances, finally I advised him to read Quinby. He replied he would rather become acquainted with the way and nature of the bee through experience, than through bee books and journals. Well, on the 16th day of May (very early indeed for swarms to issue), he had a chance to learn experience, for sure enough, as he would have it, his king bee came out with a large swarm and settled in the branch of a tree some nine feet from the ground. He placed one of his new patent hives under the tree, got two of his sons who are young men to help him, advising them all the time to keep a sharp lookout for the king, for he never had seen one, he got on a chair, bent the limb down so that the boys could hold it, he then shook the bees off into a large basket and was handing them down to the boys when the chair tipped, he slipped, the basket turned, the bees fell out on the boys and the beekeeper fell down in their midst, and as none of them were provided with a bee-hat and gloves you can imagine what a sweet time they had. I think each received about hundred stings. It has been four days since it happened and they are still fearfully swollen. I have laughed myself fat over it, and hope that my readers may enjoy it equally well.

I also hope that it may serve as a good lesson to two classes of beekeepers, viz., young begin-



ners and old ones uninformed and unwilling to be informed.

The wise man delights nature's ways to explore,  
The fool is satisfied, because he knows no more,

Men who want to succeed in bee-keeping at the present day, must avail themselves of the opportunities which our bee journals, bee books and well informed bee men give to the public, to educate themselves in this science of management and culture, then and not until then can they expect success.

OLD GRANDFATHER.

Marine, Madison County, Ills., May 20, 1872.

[Translated for the American Bee Journal.]

### Honey dew on the leaves of a Linden.

On the 21st of July, 1869, at Liebfrauenberg, France, the leaves of a linden were covered on their upper surface with a viscous and very sugared matter. The tree had contracted the honey dew disease; a kind of manna frequently observed not only on lindens, but also on many other trees. I have seen it on a plum tree, and what is more rare in France, on an oak tree.

On the morning of the 22d, the honey dew was so abundant, as to fall in large drops on the ground. It was a rain of manna. At 3 o'clock in the afternoon, the dew dropped no more from those leaves exposed to the sun. It was so thick that one could touch it without soiling his fingers. It formed a kind of transparent and flexible varnish. As soon as the leaves were in the shade, the dew returned to the liquid state. At 9 in the evening of July 23d, the leaves on the extremity of the branches, were carefully washed and sponged to remove all sugared matter. At six in the morning of the 24th, the leaves that had been washed the evening before, seemed to be free from dew; yet with a magnifying glass one could perceive some glittering points formed of very little drops. At seven in the evening, the leaves were in the same state. The day had been warm, the thermometer indicating 29° (83° Fahrenheit). On the 25th, many drops of honey were spread over the leaves, but none upon the main nerves of the leaves. At three in the afternoon, the thermometer indicated 30°.

In the night of the 26th, the leaves were washed by a heavy rain. It was impossible to watch the progress of secretion on the leaves. A swarm of bees settled on the tree. On the 28th, in the morning, the leaves were covered with spots of dew, that had appeared during the night. On the 29th, the dew increased. On some leaves it occupied one-third of the surface. At 2 P. M., the thermometer indicated 29°. On the 30th, the dew was very abundant. This linden remained covered with it until the beginning of September, when it was stopped by long and persistent rains.

On the 22d of July and the first of August, the dew was gathered by washing the leaves. The product treated by the *sub-acetate* of lead to eliminate the albumen, the mucilage, &c.,

&c., gave a syrup in which some sugared crystals were found.

This honey dew was found to contain sugar similar to that of sugar cane. After some yeast was added, the sugar disappeared completely, yet in the fermented liquor some *dextrine* was found.

The analysis of the substance gave:

	Gathered July 22d,	August 1st.
Cane sugar . . .	48.86. . .	55.44.
Fruit sugar . . .	28.59. . .	24.75.
Dextrine . . .	22.55. . .	19.81.
	100.	100.

The reader will notice, that the proportions of the ingredients were not the same in the honey dews gathered at different times. Doubtless nobody could expect to find exactly the same proportions at different times. What is most remarkable, is the striking analogy of the proportions of the ingredients of the honey dew of the linden and those of the manna of Mount Sinai, which is composed as follows:

Cane sugar . . .	55.
Fruit sugar . . .	25.
Dextrine . . .	20.
	100.

By comparing the dew spread on the sickly leaves of linden with the sugar contained in healthy leaves we find:

	Cane sugar.	Fruit sugar.	Dextrine.
In one square meter of healthy leaves.....	3 gr. 57.	0 gr. 86.	
In dew gathered on meter of sickly leaves.....	13. 92.	7. 20.	5. 62.
Difference .....	10. 35.	6. 37.	5. 62.

The honey dew exuded by the sick leaves of linden is therefore considerable, and furthermore, dextrine, which is found in those leaves, does not exist in a healthy leaf.

From the measures taken upon a tree of the same age and size, it results that the leaves could cover a surface of 120 square meters. On the 22d of July, the tree was supporting 2 and 3 kilogrammes of dew (4 to 6 lbs.).

In the normal condition of vegetation, the sugar elaborated by the leaves under the influence of light and warmth, penetrates into the organism of the plant with the descending sap. In the abnormal state which determines the formation of the dew, the sugar matter is accumulated on the upper surface of the leaves, either because it is produced in larger quantities, or because the motion of the sap is interrupted by the viscosity resulting from the appearance of dextrine.

The honey dew cannot be caused by the meteorological influences of warm summers. It is true that this linden secreted dew during a period of drouth in a hot summer, but it should be remembered that only one tree was attacked by this disease, and that only a few rods further, there were some lindens quite healthy.

Some authors pretend that plant lice after having sucked the dew from the *parenchyme* of the leaves, spread it afterwards, scarcely modi-

fied, but this is contrary to the results of analyses. Besides some persons have said that some insects can provoke the production of honey dew.

Messrs. Ehrenberg & Hemprich attribute the formation of manna in the mountains of Sinai, to the bite of the *coccus* on the leaves of the tree *Tamarix mannifera*. They say: "The manna falls on the earth from the regions of the air, is from the top of the trees and not from the sky. The Arabs call it *man*. The aborigines and the Greek monks gather it to eat on the bread like honey. I have seen it fall from the tree, I have gathered it and brought some to Berlin with the plant and the insect."

The manna gathered in 1869 at Liebfrauenberg, did not originate from an insect like that of Mount Sinai, although it was composed of the same substances. When it was first noticed on the linden, no insects were to be seen. After a day or so, lice were perceived glued on a few of the leaves. I have seen the above, after having washed the extremity of some of the branches. Some diminutive drops of dew were discovered increasing constantly until the leaves were entirely covered with it.

This slow and progressive extension of the honey dew was evidently accomplished without the help of lice, which like bees and other insects, arrived only afterward to suck the sugared food.

Translated from the Bulletin des séances de la société centrale d'Agriculture de France, by  
CH. DADANT.

The above article explains the immense yield of honey gathered by Messrs. Gallup and Hosmer. When such dews happen, the bees are never numerous enough to gather all. Oak trees in my neighborhood give some honey occasionally. It happens generally when the atmosphere has been cooled after a thunder storm. I have seen that very often every season; it is scarcely ever very abundant, but helps the bees to a certain extent.

CH. D.

[For Wagner's American Bee Journal]

### The Berlepsch Declaration.

We call special attention to the Baron of Berlepsch's reply, published by Mr. King, to our friendly strictures upon his "Declaration."

Those who desire to examine the matters in controversy, have now all the facts before them, and need no special comments from us to influence their opinions.

We accept the baron's explanation that he no longer holds us responsible for what he once supposed to be our arrogant and ridiculous assumptions, or for attempting to claim his invention as our own. We have, from our own experience, too much sympathy for his loss of health, to seek to involve him in any unnecessary controversies.

L. L. LANGSTROTH.

### REPLY OF BARON VON BERLEPSCH TO MR. LANGSTROTH'S STRICTURES ON HIS DECLARATION.

Translated from the German for the "Beekeeper's Journal,"

BY CHARLES L. COHN.

I do not understand the English language, and consequently was obliged to have Mr. Langstroth's article translated into German, and of course am compelled to give my answer in German also, but cannot be held responsible for its correct English translation.

Mr. Langstroth's accusations are, that my letters to the *Bienenzeitung* contradict the statements of my declaration in the case of Otis vs. King.

The first contradiction Mr. L. professes to find is, that in my second letter to Mr. Dzierzon, I said I had exposed myself to well deserved ridicule, because I had condemned a hive the construction of which I did not understand, while in my declaration I said that I had already in 1843, recognized the importance of the invention, and sought to improve it by substituting frames for bars.

In the spring of 1843, I got of John Baptist Furst, in Frauenthorf, Bavaria, a so-called Dzierzon hive, but I found afterwards that it was falsely constructed, because the bars ran from front to rear, instead of from right to left. I remedied this evil, but condemned the "Dzierzon hive," because I took it for granted that the bars in all of them were like this one. But on a visit to him afterwards, I found that his bars were properly arranged, and that "I had made myself ridiculous" by slandering his hives in general. When, in my declaration, I asserted that I appreciated the importance of his invention, I was alluding, as a matter of course, only to the movable feature of the hive.

In consequence of the false position of the small frames of the above-mentioned Dzierzon hive, it was impossible to place them in firmly, and after I discovered the correct idea of ranging them from right to left, I had only to remedy the defect of their being at irregular distances from each other, which I accomplished by "wings" at the corners.

This explanation fully answers Mr. L.'s second accusation also, for even if I had not perfected a plan for keeping the bars at proper, regular distances, it is nevertheless a fact that the practical idea of movable frames was invented, and the following summer sufficiently proved their usefulness.

The third contradiction, so called, is, that the glass doors were in the rear of my hives, but I wished to have them like Dzierzon's, on its sides. To effect this, it was not necessary to have new hives made, but simply to turn the hive and make the entrance hole on the other side.

In no way could Mr. King influence my declaration, because at the time it was given, that gentleman had already gone back to America; and while he was present, we were, as a matter of course, not able to understand each other, because he is not able to speak German, and I do not understand English. And I do not know whether I came to the view that Mr. Langstroth claims the absolute invention of said frames and glass supers, through an American newspaper, or a falsely translated expression of Mr. King's. I know very well that the same invention may have been discovered by different persons at the same time, but I nevertheless hold Mr. Propokovitch, a Russian gentleman, as the original inventor of the small frames. The credit does not belong to Francois Huber, because his hive consists of several parts.

I called Mr. Langstroth's hive totally impracticable. I will take that expression back, but must nevertheless declare it to be greatly inferior to those in use in Germany.

I have seen Mr. Langstroth's hive, because Mr. Backus brought one of them from America, in 1858 to the city of Gotha, where we stocked it with bees.

If I had seen the hive in 1851, I would have pronounced it excellent, but in 1858 the improvements in Germany were far superior to it. Mr. King never had any intention to deceive or influence me to his advantage, but, on the contrary, always asserted that he only wanted to find out what was *right* and *true*, and for this purpose would willingly stand any sacrifice.

At the same time, a misunderstanding is possible, as all our business had to be conducted through an interpreter; and besides my own ill-health made all mental labor more difficult, and my bodily condition makes me now hope that this statement will end my duty in the premises.

Respectfully,  
AUGUST BARON VON BERLEPSCH.

[For the American Bee Journal.]

### Is the Italian Bee superior to the Native?

The Italian bee made its first appearance in this country under the most auspicious circumstances. In the first place, it was a foreign importation and came to us with a European reputation. It is characteristic of the American people to give an extravagant reception to all European celebrities and scions of royalty, and an undue importance to foreign importations. Things of foreign importation are taken for granted to be superior to those we have at home, frequently without proper investigation and comparison; and it is only necessary for cattle, sheep or hogs, drygoods or hardware to be stamped with "imported" to give them superior value in the estimation of four-fifths of our people, when in reality they are often no better than our home-made productions.

The importation of Italian bees was made just at a time when an interest in the subject of beekeeping had been awakened by the publication of two of the best works upon the subject that had been issued in this country. They were extravagantly lauded by the importers and breeders, and eagerly sought after by beekeepers. Our Yankee acquisitiveness, always quick to see where a penny can be turned, saw in this demand a new department of beekeeping, and queen breeders became numerous, flooding the country far and wide with their circulars, enumerating at great length the superior qualities of the new importations.

Nearly all the first purchasers in turn became queen breeders, and all united in blowing the trumpet of their fame, many not having had Italian bees long enough to become acquainted with their peculiarities. The beautiful color of the Italians and marked difference from the natives made them attractive, and the opportunity and advantage it afforded in studying the habits and instincts of this wonderful insect, while changing colonies from black to striped, have made them favorites with the amateur and naturalist. Under such circumstances, it is not at all astonishing that they should become quite popular.

They have now become widely disseminated and fallen in the hands of beekeepers who do

not make queen-raising a business, but keep bees for the surplus honey, and in their sober second thought they begin to ask: Is the Italian bee superior to the native in giving larger amounts of surplus honey?

In some of our bee conventions, which have generally been inaugurated and run by those interested in the sale of Italian bees, some few had the temerity to assert that the Italian bee was a humbug, and no better than the native, while some of the correspondents of our paper more modestly assert their doubts as to their great superiority.

It is not certain that many of the superior claims of the Italians, enumerated at length in circulars of queen breeders, may be greatly whittled down or entirely cut off. That the Italian will gather honey from red clover, or any other honey producing plant, when the native bee, cannot or will not in any paying quantities, is a myth which is about exploded. That in some seasons of great drouth of honey, in some localities they have been known to secure more honey than the natives, has been pretty well established by the testimony of some reliable witnesses, but without knowing from what source the honey was procured, whether from the flowers of plants or the hives of other colonies. That they possess quite an amiable disposition, which makes them in all cases more easily handled than the natives, is no longer contended for by some of the most experienced beekeepers, and generally doubted by most who have tried them.

That their queens, as they are now carefully bred and selected, are more prolific, is generally conceded, but with all the care given to their breeding, we frequently hear of unprolific ones. That they are also more disposed to swarm frequently is likewise granted, but instead of this being a recommendation it is a decided objection with most honey raisers. It is claimed that they stick more tenaciously to the combs, but as frequent shaking off is necessary in the use of the extractor, we may hear this urged as an objection to them. It is admitted by Mr. Langstroth and others, that they will not store honey in empty surplus boxes as readily as natives, but it is claimed that they will store more in furnished combs.

We have but little or no positive evidence that they will give more surplus honey in a given number of seasons, all things being equal, than the natives. In fact, we doubt whether an impartial test and comparison has ever been made. We have all taken it for granted that they were superior to the natives, and in introducing them to our apiaries, the first thing is to get rid of the inferior blacks as soon as possible. If a few colonies of blacks remain in the apiary for a year or two, they are generally neglected, while the Italians have all attention. And should they receive the same treatment and fail to give as much honey as the Italians in one season, this will not be conclusive evidence in favor of the latter, for we know that there will be some qualities in every apiary that will not do as much as others, though everything is apparently equal. Many assign superiority to the Italians



because they are now more successful than when they formerly kept the natives; but there is not in this the least evidence in their favor. The extra cost of the Italians and their being somewhat new, will naturally cause one to take more interest in them, and give more time and attention to them, than was formerly given to the natives, and there are but few of us who have not learned a great deal more about the proper management of the Italians than we knew before. This, with the difference in seasons, and the great pains taken in raising Italian queens to have them crossed with different stocks or importations, and in selecting the most prolific for queen mothers, while the natives are left to take their own course, will easily account for this apparent difference. Let a native queen be taken from the forest of Canada, and another from Tennessee, or from any remote distance from each other. Let queens be raised from one of these, and be fertilized by drones from the other, and with these queens establish half a dozen or more colonies and place them beside the same number of Italians of the most approved stock, in the same kind of hive and with the same treatment. Say that one-half of each kind be put in two-story hives, and the extractor used, while the other half be furnished with surplus boxes, and let the result be carefully watched and compared, not for one season only, but for several. Has this ever been done? Who will try the experiment?

NATIVE.

[For the American Bee Journal.]

"Gallup's blowing up Grimm" does suit me.

When I see W. H. Furman's suggestion that there is little confidence to be placed in Grimm's queens, the good of beekeepers, and a desire to have justice done, impels me to offer my mite of evidence in the case. I make no pretensions to the nicety of discrimination of purity of Italians that some do, yet I have been cultivating Italian bees for ten years, have visited several of the most reliable queen raisers in this country, and purchased queens from others, also imported from four or five different breeders in Europe, and yet I must say that on examining Grimm's apiaries a few days since I concluded they were as reliable for purity as anything I could get either in Europe or America and consequently purchased seventy-two colonies out of Kate's apiary of about one hundred and thirty, of which I think there was not more than fifteen colonies that I could say I know they are not pure. His stock was not the brightest but certainly uniform in markings.

I think Grimm's success consisted mainly in his obtaining an abundance of reliable queens to breed from, and Italianizing thoroughly a large force of bees so that he has less need to be always manipulating with them. I only regret that Mr. Grimm cannot make it suit to cultivate queens extensively for the public. I brought my seventy-two colonies near six hundred miles at an expense of \$1.06 each. I had them reshipped at Chicago. I slept four nights in a freight car. Through the day I watched their condition, and

found them benefited by receiving half a pint of water each two or three times a day while they were excited. I also kept the outside of the hives and the inside of the car wet to keep them cool. Bees have gathered more than the usual amount of honey from fruit bloom this season.

Cádiz, Ohio, May 12, 1872.

R. WILKIN.

[For the American Bee Journal.]

There has been a very great loss in bees the past winter in this vicinity and north of us. Fully one-half of the bees that were put in winter quarters, seemingly in good condition and with a great plenty of honey (and I think, perhaps, too much) without apparent cause. My bees in the Langstroth hive and others in this neighborhood wintered well. In tall hives, seventeen inches high, with frames I made, thinking them better for wintering bees, I lost five out of seven, and my neighbor, having the Kilder hive, has over two hundred stocks, and lost more than half; and another had eighteen stocks in box hives, and lost seventeen. Fully one-half the beekeepers lost all.

For the benefit of others I will narrate my own experience. After my bees had been out eight or ten days, on the 8th of April, the warmest day of the season, about noon a swarm of bees came to my apiary and entered one of my full hives. Soon I saw my Italian queen come out. I caught and caged her. The bees continued to come out and formed in a cluster under the bottom board, and another queen, nearly dead, having been stung, appeared. I put her back in the hive, supposing the bees would come back before night. Soon another swarm came from my near neighbor's; three came before night.

During this time three of mine left, and the fourth commenced to leave, whereupon I closed them up and saved them. I caught and caged the queens of two hives. Towards evening I took what bees I could get on the outside of the hives and put them in the two hives of which I had the queens, and returned the queens into their own hives.

One is all right, I think. But the other was the next day minus bees. All these swarms had left honey in abundance. Mine had from thirty to forty pounds of sealed honey, and no brood in either of them. Some swarms had left their hives previous to this day, but this day was a perfect stampede, or day of jollification and death in this place. This is a new thing or freak in bee-culture that I do not understand, and is quite discouraging after having successfully wintered them. What is the reasons of their leaving full stores to die? Not one swarm gathered in a bunch, so that they could be hived. Is it possible that the queens were worthless? I lost five stocks in wintering and three by leaving.

DAVID BROKAU.

Oconomowoc, Wis.

Ex-Mayor Winthrop of Calais, Me., recently discovered, when removing an old chimney, one of the flues well stocked with honey.

## THE AMERICAN BEE JOURNAL.

Washington, July, 1872.

All communications and letters of business should be addressed to

GEO. S. WAGNER,  
Office of the American Bee Journal,  
WASHINGTON, D. C.

Mr. D. L. Adair, of Hawesville, Ky., requests us to inform numerous correspondents, that he is in nowise responsible for the delay in the publication of the proceedings of the North American Beekeepers' Association. He promptly made out the report of the proceedings, and forwarded them to Mr. N. C. Mitchell, a member of the Publishing Committee, and is therefore relieved from any further responsibility.

We have received several communications attacking the business character of various queen-raisers in this and foreign countries, which we for the present withhold. If upon inquiry we find these accusations to be well founded, we will publish the communications, in order to prevent others from being swindled.

We would warn young beginners in bee-keeping against endeavoring to increase their stocks too rapidly. It will inevitably result in disaster and discouragement. Long experience in bee-keeping will enable the apiarian rapidly to increase his stocks, and when winter comes, have them all strong and healthy, while a beginner will find himself at the close of the season the possessor of a number of weak and sickly stocks, and in all probability will commence the next season with doctoring up feeble stocks, or what is more than probable, abandoning bee-culture, all his bees having died.

We by no means adopt the views expressed in the article "Imprudence of Beekeepers," published in this number of the Journal. We are no believers in monopoly in knowledge, nor do we, on the other hand, fear that its spread will hinder the prosperity of any beekeeper. The teachings of experience are all on the other side. The various articles and discussions relative to bee-culture; the comparison of views, and modes of working in the apiary, as published in this and other journals devoted to bee-culture, have done much, very much to make beekeeping what it now is. We believe that bee-culture has not yet reached perfection, but that there is still much room for improvement and progress in the works of the apiary. Honey is still a luxury, but the time will come when it will be within the reach of the poorest, and the apiary will then prove more profitable than now. Let us have plenty of honest and earnest discussion on bee-culture, and there will be no danger of retrograde movement.

We trust our friends will send us full accounts of their swarming operations; of abundance or failure of the honey product, and any other matters that may fall under their observation during their busy season.

We have received from Messrs. Geo. P. Rowell & Co., a copy of their AMERICAN NEWSPAPER DIRECTORY, for 1872. It is well printed, well arranged, and will prove of great value, not only to newspapers, but to advertisers.

We have received from the Commissioner of Agriculture, a copy of the proceedings of the National Convention of Agriculturists, held in Washington City, February 15th, 16th, and 17th, 1872.

## Correspondence.

I have been in this county over two months, and have only found three colonies of bees in the county and can hear of no more. I have scattered over a peck of clover (White, Dutch and Alsike) along the roads and by-places, and intend to sow buckwheat in the next month and then have some of my Italians sent out here. Will write you how they flourish "on the plains."

O. A. A. GARDNER.

Kansas.

Bees have not done very well here this Spring. It is so very dry that we have had to feed all the time to keep them along, but we have had a nice rain and white clover is beginning to bloom, so we are in hopes we shall yet have a good yield of surplus honey. It has been a sad winter for beekeepers, some have lost almost all, and others a good share of their pets, with dysentery, but we will try again, although cast down we are not discouraged and have learned some profitable lessons by sad adversity. We wish the Bee Journal much success; do not see how any one can do without it; know we could not, for every number is worth more to us than the whole year's subscription. We say, Hurrah for Gallup's big hive! but think larger frames will beat it; at least we will try the long frames.

C. E. Cox.

Hudson, Ill.

The past year has been the poorest for bees in this State ever known, very many have lost every swarm. I saved nine out of eighteen colonies put in the cellar. I left two strong colonies in upright hives out doors (in a bee house), they both died. I have yet to learn of any one in this vicinity who saved as many as I did. I find plenty of honey in the hives, and cannot account for their death. Up to this time, June 10th, we have had but two days this year that bees could fly freely all day.

M. G. PALMER.

Portland, Me.

About three-fourths of all the bees in southern Minnesota died of bee dysentery or cholera in winter quarters or soon after placing them on their summer stands, and many of the surviving stocks are so feeble that it will require much material aid to build them up. Of 137 stocks I placed in my bee house and cellar, I lost 31. I equalized all as nearly as I could, of bees and honey, in September and early part of October.

I found quite a number beside each other on their summer stands that were in every respect as nearly equal as they possibly could be last fall, when I placed them together in winter quarters; this spring found some of said stocks dead, presenting that oft described, loathsome appearance, while their neighbors came out clean as they were in September, with loss of few bees and little honey. Tell friend Novice that he must look for some other cause than *cider mills* for that loathsome disease. Our State does not own a single cider mill and yet the disease has raged here fearfully. All the causes given by our great "bee fathers," are entirely unsatisfactory to me, and I cannot find any satisfactory cause myself.\*

JOEL BRITTS.

Mantorville, Minn.

With your permission, I will give your readers a few lines concerning bees in this section. I put 55 stocks into the cellar last December. I set them out the middle of February and found them all in good condition, except ten queens which failed. There is no disease here only what is caused by long confinement and improper ventilation. Practical beekeepers have lost heavy here; cause, the want of proper care in wintering. The farmers have lost no more than usual. It would be well for beemen to look more to winter and spring management, and say less about patent humbugs. I am using the Langstroth hive, and find it the best I can use. I keep the Italian bees and find them great workers, but think the queens have mated with a jack, as the bees are very mulish. I would like to unite with the beekeepers in the northwest and establish a honey store in Chicago. It is the only way to keep up the price of honey. I hope all beekeepers will consider the matter and act at once.

S. W.

Bees came out very poor here. Many lost all they had.

THOMAS LASHBROUK

Waverly, Iowa, June 10, 1872.

There are but few bees in this part of the country. The long-continued cold weather, with no day warm enough to give the bees a chance to discharge their faeces without losing their lives, used up a large portion of them. In March they got thawed out, but the weather became cold again before the combs became dry, and the balance of the bees became chilled and died.

L. C. WHITING.

East Saginaw, Mich., June 13, 1872.

[For the American Bee Journal.]

MR. EDITOR:—As facts are what we want, and not theory, I will give you a few facts in regard to wintering bees on their summer stands.

I bought a stock of bees of one of my neighbors last winter, and in the first part of February I moved it home. They were hybrid Italians, in a frame hive 14 by 14 and 14 inches high, single thickness, and a board laid on the top, with cleats nailed in the under side. *The cover had warped up at the edges, till the bees passed out and in freely*; all the protection the hive had from the weather, was a board fence on the north. I examined them a few days after I moved them home, and found they had brood in four frames. It was the strongest hive out of thirty. I lost five stocks that were in double hives with carpet spread on the frames and the honey brand on the top of the carpet. There were more or less mouldy combs in all the hives with carpet on the frames. I believe from what experience I have had, that it is better to winter a single hive on the summer stand than a double hive, as a few hours' sun will enable them to get at their stores. Those that I lost had consumed all the honey in the cluster, and the frost on the combs prevented them from moving far. I believe that if bees can be kept dry, they will never freeze.

As for wintering in special repositories, I think that requires more care than the majority of beekeepers will be likely to give them. I should like to hear from some who have been successful in wintering bees on their summer stands, in regard to the exact amount of upward ventilation necessary. This makes the third poor season for bees in this locality. The drought and cold winter killed nearly all of the white clover. Most of the beekeepers here are sick of the business. I have had over one hundred stands of bees offered to me on their halves, and I keep their half of the swarms, at \$2 per swarm. In my last communication I made a statement in regard to bees eating grapes that you seem to doubt. Now if it were necessary, I could bring witnesses to prove that bees have been seen to alight on sound grapes, and in a very short time they would have their suckers under the skin of the grape. I have seen vines loaded with grapes with scarcely a sound one on the vines, and at the same time the bees were so thick it was unpleasant to gather the grapes.

S. W. LOUD.

[From the Utica Herald.]

### Bee-Culture.

We give below extracts from an interesting address delivered before the Clinton (N. Y.) Rural Art Association on the evening of June 12th, by S. P. Landers, Esq.:

### BEE-CULTURE.

To the naturalist and to every curious observer, a hive of bees, in its best working condition, presents a scene of the most lively interest.

The instructive ingenuity and habits of this little insect have never failed to attract the



attention and study of some of the greatest minds in all ages of its history, and no one has ever failed to discover in its being and life things marvellous and almost incredible to believe. But leaving the natural history of the insect out of the question, it is proposed to speak in this paper only of the practical part of bee-culture.

In a perfect hive of bees there are three kinds, viz., "The queen," the mother of the whole colony; "The worker," the producer of the neuter gender, and "The drones," the male bees who take up room in the hive but bring in no honey.

#### THE QUEEN

is a fully developed female, while the workers are females imperfectly developed.

The queen is impregnated by copulating but once with the drone while on the wing, high up in the air, and in forty-six hours after her fecundation all things being right, she begins to lay eggs, and it is stated by those who profess to know, that she is capable of laying 2000 eggs in twenty-four hours. In the time of Huber, a blind Swiss naturalist of great celebrity, it was supposed that the ovaries of the queen contained regular succession of the different kinds of eggs necessary to produce the three kinds of bees we find in a hive. He made an experiment which proved to him that if the hive contained no drone comb, the queen dropped her male eggs at random and no males were reared, and so if there was no worker comb, she dropped her worker eggs anywhere and no workers were produced.

But it is now the received idea that the eggs of the queen are all alike, and that it is only the different kinds of cells in which they are laid, and the different kinds of food and treatment they receive in their embryo state, that make the three kinds of bees. All eggs deposited by the queen in drone cells become drones, and the same is true of the worker and the queen. The queen has a sting which she only uses to sting another queen. She lives four or five years if no accident happens to her, but in the after part of her life, like an old hen, ceases to be fertile.

The instinct of the workers teaches, then, the necessity of having a queen that will lay eggs so as to keep their numbers good, and they prepare to raise another queen to take her place. This they do by building a queen cell, and if, when the cell is about half done, the queen does not deposit an egg in it, they take an egg from a worker cell and put it into it, and by feeding the embryo queen with royal food, and, perhaps by some other process only known to themselves, the egg that would have been a worker, if it had remained in a worker cell, becomes a queen.

#### THE DRONE

is the male bee and has no sting—no means of gathering honey or secreting wax, or doing any work necessary to their own support, or the common good of the colony. Like some in human society, they are non-producers, and live by others' toil and industry.

#### THE WORKERS

are imperfectly developed females, and they do all the work that is done in the hive. They secrete the wax, they build the comb, gather the pollen for the young, and the honey for all, feed and rear the brood, and fight all the battles necessary to defend the colony against harm.

#### THE ITALIAN BEE

of late has been introduced into different parts of this country and Europe, and much has been said and written about their superiority in every respect to our common black bee. It is claimed that the queen is more prolific—that they can gather honey from the second crop of red clover, and from other flowers that the native bee does not visit—that they are more hardy, less irascible and more easily managed. This variety of bee was accidentally found in a small district in the Alps of Switzerland and northern part of Italy, by a captain in Napoleon's army. In 1855, Messrs. Wagner & Jessop, of York, Pennsylvania, made an unsuccessful attempt to introduce this bee into the United States. In 1858 and 1859, another unsuccessful effort was made by Messrs. Wagner, Colvin & Langstroth.

Later in the same year, seven living queens were received by the last named gentlemen, but these all perished in the winter of 1860. About the same time Mahan, of Pa., made importations, and subsequently in the same year (1860), Parsons, of Long Island, received an importation of this kind of bee from the northern part of Italy, and from these importations bees have been distributed to the many apiarians throughout the country.

When it is once established that the Italian is superior in the points claimed, the progressive beekeeper very naturally desires to adopt them in place of the black bee. But how can he do it is the question? How can he substitute the one for the other?

To do this, the first requisite is to have the movable comb hive. Without this, it would be almost useless to Italianize a swarm of bees and keep them so for any length of time.

To Italianize a hive is to substitute a pure Italian queen in place of the native queen, and the workers and drones will soon be like the mother. As the process of doing this is so well described by Mrs. Tupper, I shall use her words, as she has had experience in this business. "The queen being the mother of the whole colony, it follows if a pure Italian queen be given them instead of their own, all the bees reared after her introduction are Italian.

#### TRANSFERRING

bees from the box hive to the movable frame hive is a very simple and at the same time very important process. Capt. Hetherington, of Cherry Valley, who probably keeps the largest amount of bees of any one in the United States, explained his process at the Beekeepers' Convention in Utica, to be as follows: He takes the hive intended to be transferred into a room with the windows all darkened but one. The bees are stopped into the hive and when removed into this darkened room the hive is inverted

and a box placed on the top, rapped upon some minutes, and then this alarms the bees and they go immediately to their stores and fill their sacks with honey. Bees when filled with honey will not sting, and this is the object of alarming them by rapping on the hive. After waiting some ten minutes the box on the top of the hive, into which the most of the bees have crawled, is taken off and placed upon the floor with the open side down. The comb is then taken from the old hive and put into the frames and then fastened till the bees stick it together when the fastenings are taken off. Capt. H. fastens by means of the thorns of the red haw put through the top and sides of the frame into the comb, but Quinby & Root fasten by two small sticks wired together, top and bottom, with small wire. This latter method I should think the most expeditious and cheapest. The bees that do not crawl to the drum-box fly to the window, and when all the comb is transferred from the old hive to the frames, the new hive in which are put all the frames with comb in them, is placed directly under this window, and the bees from the box and the window are brushed into it, which completes the operation. At Quinby & Root's I learned that 15 swarms was an ordinary day's work for one man and two boys. If the bees are transferred when there is brood in the comb, it is essential that the brood should be placed together in the new hive and not scattered through it, as a certain amount of heat is necessary to the hatching of the young bees. In transferring, all the drone comb should be rejected, and all the frames should be filled with worker comb, if possible, excepting, perhaps, some corners of the frames which may be left open for the bees to fill with drone comb, which they are very sure to do. It is a great drawback in the profits of bee-keeping to have ten times more drones than is necessary, which is often the case. They consume the profits of the worker. Without the movable or "leaf hive," this thing cannot be regulated by the beekeeper.

#### ARTIFICIAL SWARMING,

where an increase of stock is desired, is the only true and safe way. From the early history of bees up to the present time, natural swarming has been, and even is now, the common method practiced. The beekeeper is on the alert when a swarm is expected out, and he cannot leave home to go to church even, for fear the bees will swarm in his absence and be off for the woods. But with the movable comb hive new swarms can be made at pleasure and all swarming can be regulated according to the wishes of the beekeeper. He can have new colonies made, or, by destroying the newly-made queen cells, he can prevent all swarming. To make a new swarm, take one of the best of the old colonies and put it in a new place, then take frames enough from that and several other hives that are filled with brood-eggs and honey and put them into a new hive, and put this hive where the old one stood. The bees that are away in the fields when the old hive is removed will return to the new hive, and thus a new swarm is formed. If the new swarm can be

furnished with a fertile queen or with a queen cell nearly matured it is so much gained, but if not they will raise a queen from the worker eggs they have. But if a queen can be furnished the new swarm, some twenty days are gained, which is very important in the honey season of the year. It is well to keep the stocks equally strong by giving the weak ones comb to brood from the strong ones. Other methods of artificial swarming are practiced, but it is generally allowed that the one here described is the best.

#### THE PROFITS

of bee-culture, like all other kinds of business, must depend upon the knowledge and attention given to the subject, the price of honey and other contingencies. It is a kind of business requiring a good deal of patience and a thorough knowledge of the habits and wants of the bee. It is but now and then we find a person competent or that will give his bees attention enough to realize any profits. The bee is universally neglected and left to take care of themselves, and hence, as should be expected, no profit is realized. During the past winter hundreds of stocks of bees have perished simply for want of trouble to remove them from their summer stands to some comfortable winter quarters. Men that cannot afford to do even this little work for their bees have no reason to expect profits from keeping them. Captain Hetherington, of Cherry Valley, sent to market in one season 2,000 pounds of honey, which sold for \$7,000.

"According to the census of 1850, there were produced in the United States and Territories 14,853,790 pounds of beeswax and honey, while that of 1860 is 1,357,864 pounds of beeswax, and 25,058,991 of honey, showing an increase of about 77½ per cent."

"Mr. Quinby, in his circular for 1872, states that Mr. Hildreth, of Herkimer, obtained in 1871, from thirteen hives, 1,500 pounds of box honey, and doubled his original stocks."

He also states that Mr. Underhill, of St. Johnsville, obtained from fifteen colonies, six swarms, 1,050 pounds of box honey, and over 100 pounds of extracted honey.

In his own apiary, he says, during the past year, (1871) of those swarms that he took the trouble to weigh, one filled forty boxes, weighing five pounds each (200 pounds), another thirty boxes. "From one we extracted 220 pounds. Very many others furnished as much more, but were not weighed."

In 1870 one hive furnished 361 pounds of extracted honey. The yield in one week, last of June, was eighty-three pounds.

In my own apiary I have had up to this time only one common box hive, but during the last year I received from eight hives in the spring, and two of them not strong, eight new swarms and 550 pounds of box honey.

But others may keep bees and give them no attention, and their profits will be very small, if they do not lose their entire investment. Bee-culture, well managed, is a good business, but if left to take care of itself, as is generally done, it had better be let alone.